



(24)
THE

AMERICAN
JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN

EDITED BY

PAUL F. MUNDE, M.D.,

*Professor of Gynecology at the New York Polyclinic; Gynecologist to
Mt. Sinai Hospital; Fellow of the Obstetrical Society of New
York, and of the American, British and German
Gynecological Societies; Corresponding Fellow
of the Obstetrical Societies of Edinburgh
and Philadelphia, and of the
Gynecological Society
of Boston.*

COLLABORATORS:

IN LONDON:
ROBERT BARNES, M.D.

IN PARIS:
PIERRE BUDIN, M.D.

IN BERLIN:
AUGUST MARTIN, M.D.

VOLUME XX.
1887

New York:

WILLIAM WOOD & CO., PUBLISHERS,
56 & 58 LAFAYETTE PLACE.

67475
6/11/06

RG

NG

RG

1

A57

v. 20

CONTRIBUTORS TO VOL. XX.

ALSDORF, JOHN, New York, N. Y.
AUVARD, A., Paris, France.
BETTS, HELEN L., Jamaica Plain, Mass.
BIGELOW, HORATIO R., Berlin, Germany.
BUSEY, SAMUEL C., Washington, D. C.
COE, H. C., New York, N. Y.
COOK, GEORGE WYTHE, Washington, D. C.
CURRIER, ANDREW F., New York, N. Y.
CUSHING, E. W., Boston, Mass.
CUTTER, EPHRAIM, New York, N. Y.
CUTTS, H. M., Washington, D. C.
DICKINSON, ROBERT L., Brooklyn, N. Y.
DONALDSON, S. J., New York, N. Y.
ELLIOT, J. W., Boston, Mass.
ENGELMANN, GEORGE J., St. Louis, Mo.
FERNALD, F. C., Washington, D. C.
FRUITNIGHT, J. HENRY, New York, N. Y.
FRY, HENRY D., Washington, D. C.
GOODELL, WILLIAM, Philadelphia, Pa.
GORDON, S. G., Portland, Me.
GRANDIN, EGBERT H., New York, N. Y.
GREEN, CHARLES M., Boston, Mass.
GREYOR GILBERT D., Park City, Utah.
HADRA, B. E., Austin, Tex.
HARRIS, ROBERT P., Philadelphia, Pa.
HARSHA, W. M., Decatur, Ill.
HEITZMANN, LOUIS, New York, N. Y.
HIRST, BARTON C., Philadelphia, Pa.
HELMUTH, WILLIAM TOD, New York, N. Y.
HOAG, JUNIUS C., Chicago, Ill.
HOFHEIMER, J. A., New York, N. Y.
JAGGARD, W. W., Chicago, Ill.
JOHNSTON, GEORGE WOODRUFF, Washington, D. C.
KAMMERER, FREDERICK, New York, N. Y.
KELLY, HOWARD A., Philadelphia, Pa.
KING, A. F. A., Washington, D. C.
KINLOCH, R. A., Charleston, S. C.
LONGAKER, DANIEL, Philadelphia, Pa.
LUSK, W. T., New York, N. Y.
MANN, MATTHEW D., Buffalo, N. Y.

MARTIN, AUGUST, Berlin, Germany.
 MCARDLE, THOMAS E., Washington, D. C.
 McLAURY, WILLIAM M., New York, N. Y.
 MILLER, JOHN ALEX., San Francisco, Cal.
 MOSHER, ELIZA M., Brooklyn, N. Y.
 PARISH, W. H., Philadelphia, Pa.
 PECKHAM, GRACE, New York, N. Y.
 POST, SARAH E., New York, N. Y.
 PRYOR, WILLIAM R., New York, N. Y.
 REEVE, J. C., Cincinnati, O.
 REICHARD, V. M., Fairplay, Md.
 REYNOLDS, EDWARD, Boston, Mass.
 SAENGER, M., Leipzig, Germany.
 SEMELEDER, F., Mexico City, Mex.
 SMITH, THOMAS C., Washington, D. C.
 TAIT, LAWSON, Birmingham, Eng.
 TAYLOR, WILLIAM H., Cincinnati, O.
 TUCKER, ERNEST F., New York, N. Y.
 VANDER VEER, A., Albany, N. Y.
 VAN DE WARKER, ELY, Syracuse, N. Y.
 WARREN, STANLEY P., Portland, Me.
 WELLS, BROOKS H., New York, N. Y.
 WILSON, H. P. C., Baltimore, Md.
 WILSON, ROBERT T., Baltimore, Md.
 WYLIE, W. GILL, New York, N. Y.

The

OBSTETRICAL SOCIETY OF NEW YORK.

The

OBSTETRICAL SOCIETY OF PHILADELPHIA.

The

OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

The

GYNECOLOGICAL SOCIETY OF CHICAGO.

The

OBSTETRICAL SOCIETY OF CINCINNATI.

The

OBSTETRICAL SOCIETY OF LONDON.

The

AMERICAN GYNECOLOGICAL SOCIETY.

The

GERMAN GYNECOLOGICAL SOCIETY.

The

INTERNATIONAL MEDICAL CONGRESS.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] JANUARY, 1887. [No. 1.

ORIGINAL COMMUNICATIONS.

A CONTRIBUTION TO THE HISTORY OF HYDRAMNIOS.¹

BY

ROBERT T. WILSON, M.D.,
of Baltimore, Md.,

Assistant Surgeon to the Hospital for the Women of Maryland; Gynecologist to the
Union Protestant Infirmary; Fellow of the Baltimore Gynecological
and Obstetrical Society, etc.

THE pathology of hydramnios has for many years enlisted the attention of obstetricians, and it has been the theme of many critical and controversial treatises. It is a fact well known that the amnion is formed from the external layer of the blastodermic membrane, and contains a sero-albuminous fluid which constantly increases to accommodate the growth and movements of the fetus. The quantity of the liquor amnii varies in different pregnancies, and when it accumulates sufficiently to cause premature labor or death of the fetus, it is then considered to constitute a disease denominated hydramnios. Before undertaking to look for the cause of the augmented amount of amniotic fluid composing the condition recognized as hydramnios, we will consider the probable origin of the fluid existing under normal conditions. It is still a matter of disputation; but the opinion of the greatest authorities, substantiated by a large number of

¹ Read before the Baltimore Academy of Medicine, Nov. 16th, 1886.

cases, justifies the belief that the fluid is a fetal product, and that its sources are :

1. The capillaries of the skin.

2. The capillary network described by Jungbluth¹ and recognized as the vasa propria of the chorionic boundary-membrane of the placenta, lying just beneath the amnion, and anastomosing with the umbilical vessels.

3. The kidneys.

In conformity with this belief, the sources of an abnormal increase of the liquor amnii are to be looked for in the fetus and in the placental circulation; in an excessive kidney and skin secretion of the fetus; and in abnormal transudation from the vasa propria of the chorionic boundary-membrane, which may remain open beyond the time when their gradual obliteration normally begins, namely, after the first half of pregnancy. Therefore the cause is to be sought in mechanical disturbances of the fetal circulation, principally in the circulation of the umbilical vessels with which the vasa propria anastomose.²

A maternal influence in the production of the abnormal amount of liquor amnii is not, perhaps, to be entirely excluded. It has been recorded by Spiegelberg that, from the vessels of the decidua vera, after the union of this membrane with the decidua reflexa, a transudation could well occur into the amniotic cavity. This view is not accepted by Carl Braun,³ who holds that such transudations collect either between the uterus and the chorion and give rise to the so-called hydrorrhea gravidarum, or, very rarely, between the amnion and the chorion, simulating, but not constituting a true hydramnios. It is thus shown that Carl Braun attributes the origin of the abnormal amount of liquor amnii entirely to the mechanical disturbances of the circulation above alluded to.

About fourteen years ago, Prof. Gusserow's⁴ interesting researches into the intrauterine secretion of the fetus gave great impulse to the reinvestigation of the source or sources from which the liquor amnii is derived. Martin Schurig, in his "*Embryologia Historico-Medica*," written in 1732, gives an extended account of the various views regarding the source or sources of the fluid. Before that date, the discussions were as to the fluid being of maternal or fetal origin, and, in the latter case, whether it was produced by the skin, the brain, the eyes, the mouth, the kidneys, or the mammae. Prof. Gusserow and

his followers came to the conclusion that the liquor amnii is in the latter months of gestation almost solely derived from the urine of the fetus, which is supposed to be secreted regularly by the kidneys and evacuated from time to time from the bladder. Wiener^b goes so far as to say that at the very first the liquor amnii is derived from the skin of the embryo, and soon after the fourth week the Wolffian bodies furnish a fluid which escapes into the amniotic cavity. This is thus kept distended, first by the activity of the primitive kidneys, and then by the more fully developed organ. He adds further that there is no fact which compels us to doubt the regular secretion of the fetal kidneys and the occasional evacuation of the urine into the liquor amnii. Werth,^c of Kiel, has published an interesting paper, "Hydramnion of one side with oligo-hydramnion of the second fetus in twin pregnancy from one ovum, with remarks about hydramnios." In this paper he gives Schatz' theory with his (Schatz') case, "Concerning a peculiar kind of poly-hydramnion with oligo-hydramnion of the other side in twins from one ovum." He says that there is nothing to be said against the correctness of Schatz' deductions from his pathological examination, but he (Werth) does not admit that there is no other explanation possible than the one given by Schatz. If we look at Schatz' theory, we see that the poly-hydramnion and the oligo-hydramnion of both fetuses depend upon the different conditions of development of the hearts and kidneys. This difference is not the consequence of an original difference in growth, but is developed from a beginning, alike at first, under the influence of an especial arrangement of a placenta in common, which consists of a third circulation between the territories of the placental vessels belonging to each fetus. Schatz shows that this intermediate territory has a certain number of cotyledons for its own, and attaches itself to the circulation belonging especially to each fetus in such a way that it is nourished by the arteries of both, and also gives back its blood to both umbilical veins after it has passed the capillaries of the villi. The hypertrophy of the heart is explained by saying that, on account of the afferent tracts not having the same size on both sides, the whole quantity of blood, with the help of the third circulation of both fetuses, undergoes an unequal distribution, to the detriment of that fetus whose blood has easier access to the intermediate circulation, and by this to the vessels of the other fetus. To answer the

increased demand which the movement of a larger amount of blood makes on the heart of the second fetus (this fetus being already plethoric), the heart becomes hypertrophied. If we do not object to the hypothetical, but still very plausible supposition of the unequal size of the arterial tracts which supply the intermediate circulation, we will hardly object, from a physiological point of view, to this deduction. The difficulty is not whether the hypertrophy is primary or acquired by functional overburdening. As soon as it is present, the further consequences are the same, and the last deduction of Schatz is the abnormal amount of liquor amnii of one fetus and the want of fluid in the other; the connecting link is the way in which the kidneys are unequally affected. The increase of the arterial pressure in consequence of the hypertrophy of the heart causes a greater swiftness of the circulation in the kidneys of the fetus with hypertrophied heart. In consequence of this (arterial pressure), the urine is therefore more plentifully secreted, and there is a strong tendency to convert all substances in the circulation into urine, and to take from the kidneys of the second fetus much of their activity, on account of their weakened circulation; at the same time the over-activity of the kidneys (of the first fetus) causes them to be hypertrophied. This condition leads to an increased function of the skin of the second fetus and a diminished secretion of the other. The circulation in the fetal placenta must necessarily react very easily to the slightest disturbances to the flow of blood in the umbilical vein, since there is nothing which could set off these disturbances if they should occur. Therefore an obstruction in the circulation which is great enough to cause an abnormal transudation from the umbilical vein or from its first placental branches must, before it has reached a great extent, so injure the respiratory and nutritive function of the placenta, by affecting the capillary terminations in the placental villi, that the further existence of the fetus is impossible. These observations are not important in considering the cases of Schatz and Werth. Here it is not a question of stasis in the flow of blood in the umbilical vein; on the contrary, the hypertrophied condition of the heart where the blood-vessels are entirely normal makes it probable, as Schatz has correctly inferred, that even the natural and normal obstructions in the capillary region of the different organs are more easily overcome, and that the blood flows in them more quickly. This

deduction holds good, not only for the renal circulation, but can, with equal right, be applied to the circulatory condition in the fetal placenta. The question is now whether the more frequent renewal of the blood which is flowing more quickly through the capillaries of the villi is not a condition to increase the resorptive power of the capillaries of the villi, and especially their extractive power (exerted) on the water of the maternal blood; also, is not the consequence of a swifter blood flow in the Malpighian bodies a more abundant excretion of water in the capsule? I should like to go a step further and ask whether, in the fetal placenta, certain conditions, aside from the circulation, could not exist which could be of decisive influence upon the way in which the constituents of the maternal blood are conveyed into the fetal circulation, and especially of influence upon the amount of water thus transferred. The majority of investigators—and among them the reliable ones—think it more probable that the nutritive material is not taken immediately from the maternal blood, but undergoes a special change in the uterine mucous membrane, and is there prepared to be taken up by the fetal villi. The structure of the human placenta seems to be somewhat more favorable for a direct transfer of the nutritive materials by means of osmosis and filtration, provided the inter-villous spaces are filled with maternal blood—a supposition whose admissibility is still contested on many sides, but which, even if just, cannot remove every consideration which can be deduced from physical and physiological reasons against this way of transfer. Such reasons are the almost absolute inability of serum-albumin to diffuse through animal membrane; the probable lack of pressure difference necessary for the passage of albumin by filtration, etc., etc. Thus, in my (Werth) case the abdominal enlargement appeared in the beginning of the fourth month, and in six weeks reached colossal dimensions. In the same way almost all the cases of Schatz and myself took the same course, and belong almost exclusively to that kind of hydramnion which has been called, not without justice, “acute hydramnion.”⁹ Zuntz,¹⁰ who has explained these reasons very aptly, cannot help thinking that the passage of nutritive matter is purely diosmotic, and thinks there are only two possibilities: either that the albumin, as an easily diffusible peptone, passes into the fetal blood, or it originates in the fetus through the synthesis of more simple compounds. The physiological

admissibility of the last-mentioned hypothesis is, as far as I know, subject to well-founded doubts, and I consider it still more improbable that the peptones contained in such small amounts in the maternal blood should be sufficient to satisfy the increasing demands which a growing fetus makes on albuminous substances. In addition to the difficulty of a purely physical comprehension of the process, it will be necessary to look at the anatomical conditions under which the exchange of material is carried on, and especially the properties of the division wall between the fetal and maternal blood.

In my estimation, the presence of an epithelial membrane has been physiologically too little considered—an epithelial layer which covers the entire surface of the placenta in an uninterrupted layer, except where the ends of the villi are in firm contact with the decidual membrane. The protoplasm of this epithelial layer, which in a thin peripheral layer becomes a kind of cuticle, shows no other modification which could make this protoplasm appear unfit for carrying on a cell activity. Now the fact is above all doubt that, by the insertion of such a cell layer, the mutual interchange of fluids is considerably influenced by a living animal membrane, so that under these circumstances the processes of endosmosis and filtration can undergo wider deviations from the fixed plan. We know, further, that the glandular epithelium in its processes of secretion, so far from being satisfied with the purely mechanical arrangement of a filter, takes part in the most vital changes of its anatomical and chemical structure, and that its activity, which is a good standard for the nature of the secreting process, goes on independently of the nature and movement of the blood circulating in the glands. And, further, it is a fact that the process of absorption in the digestive tract allows of a simply mechanical explanation just as little as the secretion, and that the process is nothing more than a spontaneous participation of the epithelium which covers the absorbing surface. Just as this has been proved for the so-called appearances of life, we shall arrive at a full and complete understanding of the fundamental conditions under which the development of the fetus is placed in no other way than through the supposition of a highly active and specific invasion of the cell activity on the surface of the fetal nutritive organs in the process of nutrition. As long as we have reason to hold fast to the generally prevailing view of

the arrangement of the human placenta, we need not look for especial arrangements which help the secretion of the nutritive fluids, but, on the contrary, for the taking of those substances which are denied entrance endosmotically on account of their physical nature, that is, for albumin. We shall have to think of an independent activity of the epithelium of the villi causing this transfer, of an actual absorption through this. If we now admit of a specific affinity of the epithelium of the villi for the albumin of the maternal blood; if we now think of the transferring of this albumin into the fetal blood carried out by chemical and physical processes in those cells—processes which are as yet out of reach of our knowledge and imagination—it is clear that this process of exchange can only go on by taking a certain amount of maternal serum with it, and that the amount of water contained in the fetal blood, besides the endosmotic exchange going on at the same time, can be decided by the process. If we now consider the taking up of water as a side function of the epithelium of the villi, it is clear that in the same way a giving up of this surplus cannot follow at once, and that other arrangements must be present to provide that the thickness of the fetal fluid is kept constant within certain limits. For this purpose exist the secreted fluids which, never mind in what way, come from the fetal circulation into the cavity of the ovum, and form the amniotic fluid. If there now exist further conditions which are able to raise the absorbent power of the villi above a certain point, and if the arrangement for carrying off the surplus water from the fetal circulation be in proper order, the fluid contents of the ovum cavity will undergo an abnormal increase, and hydramnios ensue. If there in a hydramnionic fetus an abnormally large heart and kidneys, then it is the duty of these to meet the consequences of a flooding of the fetal organism with the water of the maternal blood by an increased activity, which is likely to lead to a hypertrophy, due to over-activity, if it is kept up long, or if it is called into play too often. If this is not sufficiently compensated, you can readily see that by retention of this water in the fetal body, disturbances in the nutrition and development can be caused, as well as an effusion of fluid into the serous cavities, with hydrocephalus, etc.

The amount of absorbent activity which I attribute to the fetal placenta, although not absolute, must correspond to the extent of the absorbing surface. Therefore, the fact is certainly

not unimportant that, not infrequently, hydramnios is associated with an unusually strong development of the placenta. Spiegelberg² frequently found the placenta large and edematous, and it is, according to Schröder,¹¹ occasionally hypertrophied, with thickening and knobby swelling of the villi and luxuriant growth of the decidua (maternal?). I have (Werth) often seen an abnormally large placenta when the fetus was well developed and the amniotic fluid considerable, but not enough to cause fetal disturbances. Also, in the case mentioned at the beginning of this article, the placenta had a surface almost double that of a normal fetus, even considering the slight thickness, in decided misproportion to age and size of both fetuses. These fetuses shared the placenta, not only according to the different development, but the hydramniotic one took up by far the greater part of the entire placenta—a condition which is in harmony with my theory. In summing up (Werth), my case and Schatz's are clinically alike, only in my case the hydramnion happened earlier, and the pregnancy was interrupted sooner. Both fetuses female (Werth, Schatz), and hearts and kidneys over developed. But I cannot agree with Schatz when he says that the liquor amnii is identical with the secretion of the skin and kidneys.

It will not be out of place here to notice the views of Nieberding¹² with his case. Frau N., aged thirty-two, second pregnancy, consulted me in her sixth month, in March, 1882, on account of bleeding; last menstruation in October, 1881. On examination, abdomen large for this time, fetus small and movable in a large quantity of liquor amnii. Two weeks later, I performed abortion, because there was so much oppression and edema, and loss of strength, and no fetal heart sounds being heard. A bucket and a half of water and blood came away. Fetuses in seventh month, and female. Twins, one of which was more developed and more edematous than the other. Hydramnion of the amniotic cavity of the larger fetus. Heart and kidneys of larger fetus hypertrophied, and filled with white and red blood-corpuscles, especially left side of heart.

Theory.

At first both ova alike, thin surfaces, and capability of transudation the same; therefore, no need to look here for the cause. Capillaries of chorion on both sides equally developed

at first; need not look for cause here. So we must look in the circulatory apparatus of the large fetus for the cause. Here the left heart and kidney were hypertrophied, pelvis of kidney enlarged, glomeruli full of red and white blood-corpuscles and extravasation in the border of the medullary substance, dilatation of the renal tubules, and a bladder distended with urine with a urethra entirely pervious. The pathological changes caused by an early obliteration of the ductus arterius Botalli, which obliteration shows itself in an excessive luxuriance of the musculari and intima, and almost makes the lumen of the duct in the neighborhood of the pulmonary artery impervious. The result is, in my opinion, through closure of the duct the circulatory relations in the fetus entirely changed, more blood being forced into the arterial tracts, in consequence of which they are dilated and their walls hypertrophied; more pressure in right ventricle, and, on account of this pressure from behind, not only a stasis in the whole venous tract of the fetus, but an increased amount of blood forced through the foramen ovale into the left heart, which becomes hypertrophied in its endeavor to carry on its functions, and the blood pressure in the arterial system is raised. This is, in my opinion, the explanation. While the cause of the hydrops and anasarca was in the venous stasis, which was continued through the umbilical veins into the placental vessels, and which caused the serous infiltration in the placenta, the increased arterial pressure caused by hypertrophy of the left heart is followed by a considerably increased swiftness of the blood flow in the arterial system, and at the same time an increased filtration in the kidneys, and a diuresis which is sufficiently confirmed by the condition of the organs in question. In consequence of the immense amount of urine formed, there must have been an evacuation of the urine in the bladder at the same time, or else the bladder would have been enormously distended, as is the case in many cases where the urethra is impervious. This large quantity of urine in my opinion is the greatest contribution to the poly-hydramnion of the one ovum, whereas the other, on account of diminished blood pressure in the kidneys, had a small amount of liquor amnii. My second case is like my first, except that here we have a single pregnancy, fetus female, and well developed, seventh month, epidermis loose, bladder distended, its apex under the umbilicus, urethra pervious; left heart large and hypertrophied; liver

large; kidneys remarkably large, with pelvis filled with blood-corpuscles; placenta large and dropsical, containing large and small cysts. Heart: ductus Botalli filled with crumbling substances, vegetative growths of the columnæ carneæ and intima, so that the lumen of the duct was considerably smaller; in such a way was it filled that it was only near the aorta that little was noticed; was more abundant near the pulmonalis. The aorta and pulmonalis were normal. Early obliteration of the duct came first, and the pathological conditions following; and, secondary, increase of the liquor amnii materially affected by increase of urine secreted. Remarkable is the early obliteration of the ductus Botalli.

Küstner,¹³ of Jena, has added an interesting contribution to the literature of the subject. He gives the account of the autopsy of a case of twins (female), associated with a great amount of liquor amnii. He deduced from the post-mortem appearance the probable origin of the superfluous fluid. The smaller fetus was asphyxiated, the larger one was hydramniotic, with hypertrophy of the heart, both ventricles equally; cirrhosis of the liver, which was smaller than normal. The examination was incomplete, because he did not see the placenta and membranes. From such facts as he had, he explains the occurrence of hydramnios as follows: The cirrhosis of the liver was the primary factor, compression of the branches of the hepatic veins and portal vein resulting. As the umbilical vein opens by one of its branches into the portal vein, the other branch being the ductus venosus, the portal vein may be said to have two separate places of ramification: an intra-fetal, in the abdomen of the fetus, and an extra-fetal, in the placenta. Compression of the portal vein in the liver causes increased blood tension in both the intra-fetal and extra-fetal distribution of the vein. This increased tension would be compensated for by an increased heart action; if the tension increases slowly, the heart hypertrophies gradually, and accommodates itself to the increased demand upon it. When the hypertrophy no longer suffices to compensate for the increased venous tension, transudations occur. These take place from the intra-fetal distribution as ascites; from the extra-fetal as hydramnios. He is of the opinion that over-activity of the heart in one fetus forces the other fetus aside, and the first fetus gradually takes possession of everything. In this case, he says, there was no syphilis.

In 1880, he had a case of hydramnios which was very similar to the above case; he published the case in full with a synopsis of four cases observed by others. In this case, premature labor with twins occurred in the sixth month. The fetuses were female, and were in separate sacs. The larger fetus was in the first sac surrounded by thirty pounds of fluid; the second, which did not rupture until after the first was born, contained a small amount of fluid. The second fetus was normal. The first and largest fetus showed the following post-mortem appearances: Great enlargement of the liver, which was apparent by abdominal palpation, its vessels were enlarged, the perivascular spaces enlarged and partly filled with blood-corpuscles, the connective tissue around the vessels not increased. Ascites to the amount of thirty to forty cubic centimetres. Effusion in both pleural cavities. Hypertrophy of both ventricles of the heart. A number of circumscribed enlargements of both umbilical arteries, the umbilical vein showing no changes. The single placenta weighed four hundred and ten grams, and its cotyledons were soft and edematous. The cord belonging in the dropsical amnion had a central insertion, and was edematous; the other cord had a velamentous insertion, and was slender; there was fatty degeneration, to a great extent, of the placenta and membranes. The fluid from the dropsical sac, in addition to the usual constituents, contained 0.07 per cent of urea, which is more than double that which Fehling considers the normal amount. From the high per cent of urea in the liquor amnii of this case, he concludes that an abnormally large quantity of urine was voided by the fetus because of the increased action of the hypertrophied heart. In the four cases he collected, there was well-marked dropsy of one amnion in twins from one ovum, that is, a single placenta with one chorion and two amnions. In all these cases, the heart was hypertrophied, and in one case dilated. In three of the cases, the liver was cirrhotic and small; in two, in what he considered hypertrophic stage of interstitial hepatitis; in the remaining case, the condition of the liver was not noted. Although these cases are too few in number to prove anything, still they serve to illustrate in what way disturbances of the fetal circulation, whether originating in the liver or the heart, may lead to a dropsy of the amnion.

Kölliker¹⁴ says, there is no doubt that in birds and rep-

tiles the liquor amnii is formed by the fetus, and it is in the highest degree probable that it is the same in the human species. The skin is a source, it is very vascular in young embryos, and the kidneys, since the constituents of the urine are found in the liquor amnii, and then the fact that if pathologically the voiding of the urine is impossible, diseases of the urinary apparatus set in (Virchow). This does not exclude the fact that the maternal organism takes part in the formation of this fluid, as we see in cases of hydramnion. And the vessels of the decidua vera also take part.

Schröder:¹¹ That the fluid can transude from the maternal vessels through the amnion into the cavity of the fetus has been proved by many pathological experiments. On the one hand, there are cases in which the fetus dies or even entirely disappears, and in which, in spite of this, a quantity of fluid corresponding to the age of the ovum is found. On the other hand, in diseases of the mother which have led to serous exudations into the other parts of body, we not infrequently find hydramnion.

Krukenberg:¹² The question was started recently by Gusserow. Many investigators, but too many hypotheses, have separated the theories from the facts in this paper (Gusserow's), and on these facts, together with his own investigations, he has tried to make the question clearer. He considers, in his paper, the experiments on the human species and animals in connection with the chemical examination. Zuntz¹³ did the same, but did not take into consideration metabolic function of fetus and neonat. First question: "The passage of soluble substances into the liquor amnii"—experiments on rabbits; objection by Leopold.¹⁴ Experiments on rabbits do not hold good in man, because in rabbits the maternal and fetal blood is further apart. Between epithelial cells of amnii are stomata. Gusserow gave KI without finding it. Benicke and Zweifel gave salicylic acid without finding it, although it was found in the fetal urine. Gusserow¹ tried benzoate of sodium, but did not find it. Porak¹⁷ and Fehling¹⁸ tried different substances without success. In rabbits, the passage of colored sulphate of sodium into the liquor amnii has been proved after intravenous injection. In the human species, material found in the liquor amnii never fails to be found in the urine of the neonat. It is a fact that the passage of solid material, which has been given to the

mother, passing into the fetus, is by no means constant even when the doses are large and frequently repeated. Krukenberg gave in ten cases KI by the mouth to the woman at the end of labor, then washed out the vagina, and drew off the liquor amnii from the sac with a trocar, and every time found it in the fluid. He says, if, a few hours before the birth of the child, KI or other easily diffusible substances are given to the mother in moderate doses, that the substance can be found in the liquor amnii.

Second question: "As to source of the liquor amnii"—two theories.

1. A product of fetal kidneys—supporters: Runge, Wiener, and especially Gusserow.

2. A transudation from maternal vessels.

Fehling¹⁸ says the umbilical cord contributes to the liquor amnii. It has not been proved that the fetus urinates within the liquor amnii. Zuntz¹⁰ says the contrary. Porak¹⁷ and Fehling¹⁸ say that the child does not urinate until it is born. Physiological and chemical examination of hydramnios do not help to reveal its source. Experiments made by Sallinger¹⁹ show that when a liquid is injected into the umbilical vein it transudes with great rapidity into the amniotic sac, and that the amount of transudation is proportioned to the pressure exerted and to the size of the cord.

Levison²⁰ found that the capillary network (*vasa propria*) of Jungbluth was persistent at term in hydramnion, but not in normal pregnancy.

Lebejew²¹ concluded that, in certain abnormal conditions of the fetus associated with hydramnion, the capillary network of Jungbluth was persistent to the end of labor. And almost without exception the fetuses were female. Zuntz, Wiener, and Bar state that substances, experimentally injected into the maternal veins, may be found in the liquor amnii without having first traversed the body of the fetus. Wilhelm Jakesch²² says that Spiegelberg found, in all cases observed by him, hereditary syphilis as the cause of the disease; and it is a remarkable fact that there is edema of the mother at the same time.

Keiller²³ mentions a case in which there was syphilis of the mother with edema and dropsy of the fetus. Meissner mentions a case of Lamouroux in which there was general dropsy of a fetus of six months, with a dropsical mother.

Hufeland also quotes a case of Ollivier's in which a dropsical woman in the eighth month gave birth to a dropsical fetus. Cruveillier describes two cases in which he was able to find syphilis in the mother; these cases were not combined with dropsy of the mother. Duettel, Seeger, Schurigplater, Sopsietlerus, M. A. Severinus, Bourgois, F. B. Osiander, Billard, and Carus give cases of the same kind.

Osiander, Carus, and Cruveillier mention cases in which the fetuses were born alive, but died soon after, dropsical. More interesting cases are mentioned by Steinwirker.²⁴

Betschler found in a case a disturbance in the circulation of the umbilical veins, and attributed the hydramnion to this.

Steinwirker had an analogous case which he calls elephantiasis congenita cystica; the hydramnion was conjoined with an elephantiasis-like thickening of the skin. As to the occurrence of hydramnion of the placenta, it seems to occur less frequently than hydramnion of the fetus, but it is very often found with the latter. Spiegelberg points expressly to the fact that hydramnion of the placenta is hardly likely to depend upon diseases of the uterus; on the contrary, fetal disturbances of the circulation of the umbilical cord generally originate in the fetus. Simpson also found disturbances of the fetal circulation as the cause of the dropsy. If we now look at the result of these observations, we find that the causal relations in the mother and the fetus are not sufficiently fixed, and the explanation of the pathogenesis does not stand every test. Dropsical mothers give birth to healthy fetuses, and indeed Charpentier⁹ reports a case of hydramnion of the placenta with fetus healthy. On the contrary, dropsical fetuses are born of healthy mothers. In some cases, we see congenital syphilis with its consequent destroying processes in the large glands of the abdomen explain the pathological origin from the evident syphilis of the mother (in one of the cases of Cruveillier, the mother had undergone the inunction cure during her pregnancy). In many other cases there was no clue to an explanation. The presence of disturbances in the fetal circulation in the neighborhood of the umbilical veins (Betschler, Simpson) seems to be sufficient to attract the attention in investigating its cause. In the mean while, the fact remains unexplained, that such fetuses which are in utero, becoming dropsical, sometimes live to full term, and indeed are born alive, and some of these cases are the most remarkable

ones. On the other hand, in disturbances in the arteries of the cord, we would much sooner expect to find anomalies of development than excessive hydramnion. The so frequent coincidence of dropsy of the mother might suggest a changing relation between mother and fetus, and might give weight to the opinion that perhaps a general defect in the mother's blood, such as hydremia, leucemia, or pernicious anemia, might lead to the same condition in the fetus, by introducing the pathologically changed source of nourishment and development. But no fact has been found to fit this theory. So we must wait for further investigations.

McClintock:²⁵ out of 33 cases, 9 children were born dead; and out of the 19 live born, 10 died within a few hours, the remainder lived. The hydramnion occurred more frequently with female than with male fetuses, in the proportion of 25 of the former to 8 of the latter. Of these 33 cases, 4 ended in the death of the mother. One woman died from rupture of the uterus (the child was hydrocephalic); another from puerperal fever (epidemic at the time); and the other two deaths were from debility and prostration. It must be confessed we know very little of the pathology of this complaint, or of the special conditions which give rise to it. In a large number of cases which I have seen, in but few examples was there any notable appearance of disease of the amniotic membrane. In these exceptional cases, the amnios was partially opaque and thickened, but nothing more. That the disease does not depend on a dropsical diathesis of the woman herself is shown by the fact that these women are often free from dropsical effusions in any other part of the body; and also that very many patients are affected with general dropsy at the time of delivery, in whom, nevertheless, there is no marked excess of the liquor amnii.

Charpentier,⁹ in a long and exhaustive treatise, concludes that the pathological anatomy of this disease is far from presenting the least certainty; and further, that it is not rare to find the lesions to which hydramnios has been thought to be due in cases where there had been no trace of hydramnios.

Kidd²⁶ reports that he once tapped a case of amniotic dropsy through the abdominal walls, believing it to be a case of ovarian tumor; no bad result followed; the woman recovered after the birth of the dead twins, and since then has had a normal pregnancy. It will not be out of place now to give a few cases of

hydramnios, and one in my own experience, with the report of the examination of the specimen by Prof. Wm. H. Welch, M.D., of the Johns Hopkins University.

Jos. W. Hunt, M.D.²⁷—Mrs. E. M., aged 46; married 20 years; mother of many; the last was born dead at full term, and dropsical all over. When seen by me, she was seven months pregnant. Abdomen very much distended. There was no general or local edema of body. No marked prostration. On making a vaginal examination, it was found that labor had commenced. In about fourteen hours a dead dropsical child was born; its birth was preceded by the escape of an immense quantity of liquor amnii. Mother made a fair recovery. No syphilitic history could be made out. The hydramnios, in my opinion, was due to obstructed circulation through the umbilical cord and placenta.

H. W. Boddy, M.D.²⁸—Mrs. E. had borne four healthy children, and was now advanced six months in her fifth pregnancy. I found her a sallow and rather emaciated woman. Abdomen much distended. She complained much of dyspnea and pain, caused by the excessive abdominal distention. My opinion, from an examination at this stage, was that of a large unilocular ovarian cyst complicating pregnancy. In a few days I made a vaginal examination, and found that the os was dilated, and the membranes protruded. By examination now, the case showed that it was one of excessive hydramnios. I punctured the membranes, and a very large quantity of fluid drained away. Two days later, labor set in; it was lingering, lasting a day and a half. The pains became weaker and less frequent. I applied the long forceps to the head, and completed delivery. The head was enormously hydrocephalic. Body and limbs small. The lingering labor was accounted for: 1st, the difficulty of forcing an enlarged though soft head through the passages; 2d, there being so small a bulk of body and limbs for the uterus to contract upon; 3d, the over-distention and want of development of the uterine muscular fibres lessening the propulsive power. In this case, the placenta and cord were too soft and decomposed to give any information. The hydrocephalus in the fetus was doubtless causally connected with the hydramnios, resulting from venous congestion of the fetal arachnoid membrane. There may have been some latent syphilis in this case, as the husband had been a soldier twenty years; but there were no signs of it, either in him or his wife.

Chas. A. Oliver, M.D.²⁹—J. B., aged 28; colored; single; born in Philadelphia. Menstruated at 12 years of age. One child. Previous to pregnancy had some slight abdominal swelling, with edema of limbs, relieved by purgatives and diuretics. Menstruation ceased eight months ago. Fetal movements for last three months. Abdomen now very large; no edema of limbs. So I punctured the membranes, allowing the escape of over twelve pints of liquor amnii. She was delivered of a small female child;

after great efforts, succeeded in saving it, but it died the next day. The placenta was adherent, but after some trouble peeled it away with my finger. Total duration of labor eighty-one hours. She was greatly prostrated. She gradually regained strength.

W. R. Chittick, M.D.²⁰—Mrs. G., aged 20; nervous temperament; blonde; hair a bright auburn color; weight 130 pounds. Married in August, 1884, to a man also of the blonde type, with auburn hair, and a large, vigorous body. She became pregnant soon after marriage. At the end of the seventh month, the abdomen was so greatly distended that her aunt thought she was surely nine months pregnant. On February 8th, uterine pains became strong, and vaginal examination showed that labor had set in. I ruptured the membranes, and at least two pints of fluid escaped; the pains increased, the head advanced, and just as the child was born there was a great gush of fluid, ten pints escaping. It was a seven months' fetus; it was dead, and its abdomen was greatly distended with fluid; the skin had a peculiar mottled appearance. I was not allowed to further examine it. She made a good recovery from the labor.

F. H. Milligan, M.D.²¹—Mrs. R. F., aged 36; mother of seven children, all living. She was between five and six months pregnant. I ruptured the bag of waters, which protruded from the vagina. Not less than three ordinary buckets of the liquor amnii was mopped from the floor, and at least another bucketful must have been lost. Two fine healthy male children were expelled alive, but only lived about half an hour. Mother made a good recovery.

G. G. Hopkins, M.D.²²—Mrs. —, aged 32; fifth pregnancy; she expected to be confined early in January. I saw her November 18th. She was as large as a woman at term; fulness about ankles; no albumin in urine. Saw her again December 9th; she was then so large and suffering so much that I suspected a superabundance of liquor amnii; her friends said twins. On the 10th, I ruptured with difficulty the membranes, as they were very thick. A gush of fluid came, such as I had never seen before, saturating everything; shortly after, another gush, which ran off in streams from the bed, filling two large chamber vessels at the side of the bed; a third gush, and the carpet and several sheets, which had been placed over the carpet, were soaked. I introduced my hand into the vagina, and in five minutes entered the uterus, and found the fetus floating in sufficient water to be readily movable. I made podalic version, and delivered a monstrosity with a very large head and a fully developed body, but deformed in all four extremities. Weight, ten pounds. The placenta came away well, the uterus contracted perfectly, still she said that she had no pain during the whole labor. She made a good recovery.

F. C. Robinson, M.D.,²³ three cases.—1. Mrs. W., aged 36, a large, muscular, and well-developed woman. She was in the

eighth month of her fifth pregnancy. The membranes ruptured, when an enormous quantity of liquor amnii escaped, flooding the patient, bed, and floor. I had no means of ascertaining the amount. In two hours, she was delivered of a still-born child weighing six pounds, perfect in limb and body, but with its cerebrum entirely wanting, and between the superciliary ridge of the frontal and occipital protuberances no osseous formation, this area only covered by a loose and flabby integument, giving the child a hideous appearance. She made a good recovery. 2. Mrs. S., aged 24, a small, well-formed blonde. I found her in labor at full term of second pregnancy; the same dropsical condition was present as in the above case, though in a minor degree. After a short labor, a monster was born; it had no brain or cranial bones above the ears; this surface was covered with a loose skin well supplied with auburn hair. The child was alive at birth, but never respired. She made a good recovery, and has since had a normal labor with perfect child. 3. Mrs. S., aged 40; six months advanced in third pregnancy. I found her suffering from an abdominal distention which seemed limited only by her capacity to still further enlarge. On the second day, when I saw her, she was in labor. Upon rupturing the membranes, more than three gallons of fluid escaped into a vessel placed to receive it. Three perfect and well-developed boys of near six months' fetal life were born. There was a single placenta, with three amniotic apartments, which probably communicated with each other or were ruptured at the same time. She made a good recovery. He adds (Dr. Robinson): Can three six months' boys make three gallons of urine while in utero?

Chas. M. Green, M.D.³¹--Mrs. —, aged 29; below the medium height, and of slender form; married at 19 years of age, and in ten years had borne five children in rapid succession, namely, 1875, 1876, 1878, 1879, and 1881. The children were all girls, and weighed at birth from eight to ten and one-quarter pounds; the labors were all normal. She suckled her last baby once a day for four months, when the menses appeared and recurred regularly until October 27th, 1882, at which date her last period ended. About February, 1883, she thought she felt fetal movements. The abdomen enlarged to the usual size at the end of the eighth calendar month of pregnancy. Parietes tense, and the superficial veins well marked. No fetal heart sounds heard, but the uterine souffle was plainly audible. Ballotement revealed a small fetus. On March 13th, the abdomen measured on a level with the umbilicus 36.5 inches. On the 19th, the abdomen, measured as before, was 39.0 inches; the distance from the ensiform cartilage to the pubes was 16.5 inches. On the 21st, she was in great distress; she could assume no position in which she was comfortable; she had had no refreshing sleep for several days; narcotics seemed only to deaden her sensibilities. She could take no solid food, was worn out, and said she felt as though she would burst. The distance now from ensiform cartilage to the

pubes was 18.0 inches. I now determined to bring on labor, and passed a new English gum-elastic catheter, with its stylet sharply bent near the tip. I passed it between the uterus and the membranes, a distance of seven inches, then, turning it quickly, ruptured the membranes high up; withdrawing the stylet, drew off six quarts liquor amnii, and the uterus contracted down to two inches above the umbilicus. There was no shock, but a feeling of great relief. There were active fetal movements. In three-quarters of an hour, uterine contractions set in, and continued during the night; she was comfortable, and slept between pains; there was constant dribbling of fluid. On the 23d, pains increased, and soon a male fetus was born; and in thirty minutes a second male fetus was born. A single placenta came away; it weighed one pound and one ounce; microscopically it was normal. There was one chorion, and doubtless there had been two amnions, but the septum had partly atrophied; the remaining septum was of falciform shape. She made a good recovery.

A. R. Simpson, M.D., two cases, both confined in the Maternity within the same twenty-four hours. Both had anencephalic children, and the birth was attended with the escape of an excessive quantity of liquor amnii.

D. C. Lichliter, M.D.:—Mrs. C., aged 31; married eight years; had one child, a girl, 7 years old. In the fifth month of pregnancy, the girth of the abdomen at the umbilicus forty inches. Some edema of limbs below the knees. Labor set in, and two dead female fetuses were born; a great amount of liquor amnii escaped. The first fetus was connected to the placenta by a slender cord not larger than a lead pencil; entire cutaneous surface of its body was livid. The navel cord of the second fetus was three times the size of the other. The second fetus was well nourished and almost twice the size of the first. The placenta showed no evidences of disease; there were two separate sacs; the one of the first fetus born was thin and friable. The cord of the first fetus had a velamentous insertion, that of the second located centrally. The first fetus weighed three hundred and ninety grams, the second seven hundred and five grams. She recovered from the labor.

H. P. C. Wilson and Robert T. Wilson.—Mrs. P. H., aged 31; married; mother of six living children. Was brought to our office, June 30th, 1884, by her physician, Dr. E. Hall Richardson, of Belair, this State. She was supposed to be pregnant. Upon examination, her abdomen was found to be enormously distended; for one month she had been unable to lie down, from inability to breathe in the recumbent position. Her feet, legs, and thighs were so much swollen that the finger, on pressure, would bury itself anywhere on their surface. The pain from the abdominal distention and the edema of the lower limbs was great, and she was obliged to sit day and night in the erect position to get breath. Percussion over the whole abdomen from pubes to the ninth rib, and from below the right to below the left ilium, gave

complete dulness and fluctuation, and change of position did not at all change the dulness. She was so enormous and so uniformly dull that there was no making out at all what were the contents of the abdominal cavity. Her health had, previously to five months ago, been always good. Her liver, heart, lungs, and kidneys were sound. The only points of clearness on percussion were close up to the spine in either lumbar region and, for a limited extent, behind the ensiform cartilage.

We were greatly puzzled to make out an exact diagnosis. She ceased to menstruate five months ago, after being uniformly regular, nausea followed and all the usual signs of pregnancy, and she supposed herself pregnant, but she had grown so rapidly large—as she had never done before in former pregnancies—that she and her friends were anxious about her condition. Besides, her sufferings were so great and her exhaustion so complete that something had to be done promptly, or she could not live.

By the history of the case, by the fetal heart sounds and the placental souffle, and by the mulberry-blue color of the vulva and vagina, pregnancy was made out beyond a doubt. The abdomen being so hard and distended, we could not make out the size of the uterus, and to pass the sound was unjustifiable. We told her physician that she had one of three things—either general dropsy, or a cystic tumor of the ovary conjoined with pregnancy, or hydramnios. Ascites was excluded because of the soundness of all her vital organs, and her excellent health before commencing pregnancy.

We were inclined to think that it was a cystic tumor of the ovary with pregnancy, and to strengthen this opinion there was a well-marked depression in the abdominal wall just below the navel, as if the uterus extended that far only and the balance was a fluid tumor. We advised that she at once enter St. Vincent's Hospital; and, as the safest course to pursue, make an exploratory abdominal incision on the following day. If it should prove to be ascites, the fluid could be withdrawn; if it was a cyst of the ovary, it could be removed; if it was hydramnios, the wound would be closed and the membranes ruptured and labor brought on. She entered the hospital, and on the next day, July 1st, when I arrived at the Hospital, I was told by the Sister in charge of her that she certainly could not live through the operation, as she had been sitting up all night, in great pain from the distention and panting for breath. She (Sister) had given her stimulants and applied heat to her body. I examined Mrs. H., and found her extremities cold, eyes sunken, and features pinched, and pulse very small and feeble. I continued the heat to her body and gave brandy liberally. After working over her for some time, I brought up her pulse some. When father arrived, we consulted and decided to go ahead with the operation. Dr. H. P. C. Wilson operated, assisted by Dr. Robert T. Wilson. There were also present Drs. James Butler, E. M. Wise, E. H. Richardson, and Nathan Rino Smith. Dr. Wise was the anes-

thetist. All antiseptic precautions were taken. The spray was used, but stopped when the incision began. An incision two inches long was rapidly cut midway between the umbilicus and pubes. No peritoneal fluid escaped. A mahogany-red body presented itself, a fac-simile in color of every impregnated uterus seen from the abdominal cavity. The walls seemed about as thick as an ordinary cystic ovarian tumor. Fluctuation was very distinct everywhere, and at no point could any solid mass be discovered within, or connected with it. To all appearances (except color) it was a perfect specimen of a cystic ovarian tumor. Exploration was made in every direction, as far as this incision (two inches) would allow, but nowhere could be found intestines, uterus, or any abdominal or pelvic organ. Nothing but this immense fluctuating tumor, with very thin walls. A steel sound, eighteen inches long, was carefully passed in and swept around, but it encountered nothing but the smooth surface of this fluctuating tumor. No adhesions anywhere. The incision was now enlarged to four inches and the hand and arm passed in up to elbow joint. When the elbow was at the abdominal opening, the tip ends of the fingers could just reach the top of the tumor, pressing up the diaphragm behind the sternum and well up into the thoracic cavity. The intestines were found crowded closely back against the spinal column. No adhesions found. On approaching the pelvic cavity, nowhere could the uterus and bladder be found, and this tumor came from the pelvic cavity, which made us feel very sure that it was none other than the uterus itself impregnated and with a dropsical amnion. To make the diagnosis certain, a finger was passed very gently through the os uteri into the cavity of the uterus, while the operator's other hand and arm remained in the abdominal cavity, resting upon the tumor, as far down into the pelvic cavity as it could reach. By these manipulations the fingers of the two hands were in contact with each other, only separated by the thin walls of the uterus. Thus it was made out beyond doubt that it was the uterus itself, and its contents those of pregnancy with excessive hydramnios. The finger in the uterus felt the head of a child through the bag of waters. When the fingers of the two hands were brought together with the wall of the uterus between, it seemed not thicker than one-eighth or one-tenth of an inch. The os uteri was soft and easily dilatable, so that the finger entered easily without force. On establishing the diagnosis, the incision was closed with seven carbolized Chinese silk sutures. While she was still on the table and had not recovered from the chloroform, the membranes were ruptured. There was at once a rush of liquor amnii, which can only be termed a uterine avalanche, which flooded patient, floor, and doctors. With large tubs under and around the table, we succeeded in catching six gallons by measurement, and I am sure a gallon or more was lost. We are certainly within bounds to estimate the liquor amnii at seven gallons. The abdominal walls were wonderfully caved in after the removal of this great

quantity of liquor amnii, and her emaciation was not realized before. Dry clothing was immediately placed upon her, and she was put to bed and treated as after all cases of ovariectomy. Reaction promptly came on, and on recovering from the chloroform her first expressions were those of gratitude for her great relief. She was comfortable and free from all pain till 7:30 p.m. when she was taken with labor pains. I attended her, and by 8 p.m. delivered her of dead twins. There was one placenta; each fetus had its own amnion and cord; there was one chorion. The larger fetus was born first; its sac was ruptured. The smaller fetus was born within its sac, which was intact and contained two pints of liquor amnii.

July 2d, 5 o'clock p.m.; temperature 99, pulse 88. Suffering great pain all over abdomen, and abdomen extremely sensitive to touch. The pains appeared to be after-pains of a more exaggerated character than we had ever seen before. The uterus had contracted to two inches above the umbilicus, and occupied the whole abdominal cavity below this point, from the crest of one ilium to that of the other. The abdominal incision looked healthy. Much disposition to nausea. Had no uterine hemorrhage. I applied cold applications to the abdomen constantly, and gave one-half grain of codeia every two to three hours, sufficient to control, but not to stop the after-pains. Also half an ounce of aq. calcis with one and one-half ounces of milk every two to three hours till stomach was settled. Urine was drawn off, as she could not void it naturally.

July 3d, temperature 99 $\frac{3}{4}$, pulse 88. After-pains much relieved. Nausea quieted. Has slept since the violent after-pains were calmed. Abdominal tenderness very much diminished, but continued the cold applications. Has taken two grains codeia since yesterday. Milk and aq. cal. continued as desired. Urine still drawn. Uterus contracted down to the navel and within the crest of either ilium, so as to give very limited clear percussion over either iliac region. Lochial discharge natural. Vagina washed out daily with carbolyzed water. Ordered the codeia to be given only when the after-pains were excessive. Her general condition excellent. July 4th, temperature 98 $\frac{3}{4}$, pulse 80. Doing well. Slept last night without the soporific. Abdomen soft, without tenderness. Takes nourishment plentifully. Abdominal incision united well. Bowels moved freely to-day, by giving comp. liquorice powder. Uterus gradually contracting. July 7th. Rapidly convalescing. Has no unpleasant symptom. Last sutures removed to-day. Wound healthy, well united. Uterus hard and prominent at the pelvic brim, about the size of an infant's head. Lochia normal. She is very cheerful and wants to know when she can go home. July 20th. She was discharged to-day, and went home well. We never saw any patient make a better and more rapid recovery after a normal confinement. Since the above, she has passed through a normal pregnancy

(January 28th, 1886). Child a fine boy. At the present writing she is in good health. There is no syphilitic history in this case.

JOHNS HOPKINS HOSPITAL, }
BALTIMORE, Aug. 4th, 1886. }

Dr. Robt. T. Wilson.

DEAR SIR:—The following is the result of my examination of the specimen you sent me.

It consists of two fetuses with the placenta and membranes. The membranes have been ruptured. There are two amnions and a single chorion. There is a common placenta which measures 23 cm. in length, 17 cm. in breadth, and 3 to 4 cm. in thickness. The placenta is irregularly oval in shape. It presents no abnormality in its structure. There are two umbilical cords, each of which is inserted near the margin of the placenta, at a distance of 11 cm. from each other. The cord which belongs to the larger fetus is 36 cm. long and 1 cm. thick; the cord of the smaller fetus is 32 cm. long and 8 mm. thick. The two fetuses are quite unequal in size, but both appear to be normally developed. The larger fetus is 31½ cm. long. The circumference of the head is 25 cm. The smaller fetus is 28 cm. long; the circumference of the head is 20 cm. Both are of the female sex. A careful dissection was made of each fetus, but nothing abnormal could be determined. In view of certain hypotheses advanced concerning the causation of hydramnios, it may be especially mentioned that the ductus Botalli in each fetus was pervious and of normal dimensions; and that the kidneys were free from disease; nor could any evidence of disease be discovered in the membranes.

Very truly,

WILLIAM H. WELCH.

LITERATURE.

1. Jungbluth, Beitr. z. Lehre vom Fruchtwasser, etc., D. i., Bonn, 1869; Virchow's Archiv, Bd. 48, S. 523; and Archiv f. Gynäk., Band 4, S. 554.
2. Spiegelberg, Lehrbuch der Geburtshülfe, 2te Aufl., S. 316; Lehrbuch, 1 Aufl., S. 338.
3. Carl Braun, Lehrbuch der gesam. Gynäk., S. 79; Ibid., S. 604.
4. Gusserow, Zur Lehre vom Stoffwechsel des Fetus, Archiv f. Gynäk., Bd. III., S. 241; also, Zur Lehre vom Stoffaustausch zwischen Mutter und Frucht, Ibid., Band XIII., S. 56.
5. Wiener, Ueber die Herkunft des Fruchtwassers, Archiv f. Gynäk., Bd. XVII., Heft 1, S. 24.
6. Werth, Archiv f. Gynäk., Bd. XX., Heft 3, S. 353, 1882.
7. Schatz, Archiv f. Gynäk., Bd. XIX., S. 329, 1881.
8. Turner, Comparative Anatomy of the Placenta, Edin., 1876.
9. Charpentier, A., De l'hydramnios et en particulier de l'hy-

dramnios aiguë, Archiv de Tocologie, 1880; also *Traité pratique des accouchements*, Tome I., p. 880-919, 1883.

10. Zuntz, Ueber die Respiration des Säugethier-Fötus, Archiv f. Physiologie, Band XIV.; also, Ueber die Quelle und Bedeutung des Fruchtwassers (Vorläufige Mittheilung), Pflüger's Archiv, Bd. XVI., S. 548.

11. Schröder, Lehrbuch, 6 Aufl., S. 436; also, Lehrbuch der Geburtshülfe, Bonn, 1877.

12. Nieberding, Archiv f. Gynäk., Band XX., Heft 2, 1882; and, Allg. Wiener Med. Zeitung, Bd. XXIX., S. 113, 1884.

13. Küstner, Archiv f. Gynäk., Bd. X., S. 134, 1876; also, Archiv f. Gynäk., Bd. XX., Heft 2; also, Archiv f. Gynäk., Bd. XXI., Heft 1; also, AMER. JOUR. OBSTET., Vol. XVII., p. 1,208, 1884; also, Boston Med. and Surg. Jour., Vol. CXI., p. 123, 1884.

14. Kölliker, Entwicklungsgeschichte, Leipzig, 1879.

15. Krukenberg, Archiv f. Gynäk., Bd. XXII., Heft 1, 1883.

16. Leopold, Archiv f. Gynäk., Bd. XI., S. 479.

17. Porak, Absorption des médicaments par le placenta, p. 87, 1878.

18. Fehling, Beiträge zur Physiologie des placentaren Stoffverkehrs, Archiv f. Gynäk., Bd. XI., S. 523; also, Ueber die physiologische Bedeutung des Fruchtwassers, Ibid., Bd. XIV., S. 221; also, Archiv f. Gynäk., Bd. X., S. 392.

19. Sallinger, Dissert. Inaugural., Zurich, 1875.

20. Levison, Archiv f. Gynäk., Bd. IX., S. 517.

21. Lebedjew, *Traité pratique des accouchements*, par A. Charpentier, p. 886-890, 1883.

22. Jakesch, W., Centralblt. f. Gynäk., Bd. II., Leipz., 1878.

23. Keiller, Edinbg. Med. and Surg. Jour., 1855.

24. Graetzer, Krankheiten des Fetus, 1837.

25. M'Clintock, A. H., Diseases of Women, 1863.

26. Kidd, Transac. of the Dublin Obstet. Society, 1877-78.

Ahlfeld, Archiv f. Gynäk., Bd. XIII., S. 241; Ibid., Bd. XIV., S. 276; also, Defecte des Amnionepithels., Ber. u. Arb. a. d. geburtsh. gynäk. Klin. zu Marb., 8vo, Leipz., 1885, Band II., S. 39-53; Ibid., S. 121.

Rindfleisch, Eine Vergrößerung des Caput gallinaginis als Ursache congenitaler Ischurie und Hydronephrose, Virchow's Archiv, Bd. LXXXI., S. 521.

Prochownick, Beiträge z. Lehre vom Fruchtwasser und seiner Entstehung, Archiv f. Gynäk., Band XI., S. 304 and 561.

Haidlen, R., Ein Beitrag zur Lehre vom Fruchtwasser, Archiv f. Gynäk., Bd. XXV., Heft 1, S. 40-50, 1884.

Delassus, Etude sur l'hydropsie de l'amnion, Thèse, Paris, 1882.

Viti, A., Sulla struttura dell' amnios umano, Bull. d. Soc. tra i cult. d. sc. med. in Siena, Vol. III., p. 196-200, 1885; Ibid., p. 225-228.

Greslou, Note sur un cas d'hydramnios suivi de présentation de la face, Chermont, 1885, Daix frères, 8vo.

Lebedeff, E., Gavan. Pokrov. Rodil. Prioute, St. Petersburg, 1879, I., p. 48-73.

Budin, P., Progrès méd., Vol. VII., p. 648, Paris, 1879; also, J. d. conn. méd. prat., Par., 1879, 3s., I., 135.

Pilat, Bull. méd. du Nord, Lille, 1879, XVIII., 187-192.

Lusk, Science and Art of Midwifery, 1886.

Cazeaux and Tarnier, Theory and Practice of Obstetrics, 8th American edition, 1886.

Barnes, Obstetrics, 1886.

Leishman, System of Midwifery.

Playfair, System of Midwifery, 1886.

Simpson, A. R., Edinbg. Med. Journal, July, Vol. 28, Part I., 1882.

Evans, A. H., Atlanta Med. and Surg. Jour., Vol. II., p. 404, 1885-86.

27. Hunt, British Med. Journal, Sept. 7th, 1878.

28. Boddy, British Med. Journal, Sept. 28th, 1878.

29. Oliver, Phil. Med. Times, Dec. 7th, 1878.

30. Chittick, Detroit Lancet, June, 1885.

31. Milligan, Trans. Minnesota State Med. Society, 1878.

32. Hopkins, Proceedings Med. Society of the County of Kings, Brooklyn, N. Y., 1879.

33. Robinson, Chicago Med. Jour. and Examiner, Vol. XXXIX., 1879.

34. Green, Boston Med. and Surg. Jour., Vol. CXI., 1884.

35. Lichliter, AMER. JOUR. OBSTETRICS, Vol. XVIII., June, 1885.

King, A. F. A., Manual of Obstetrics.

VENTRAL HERNIA CAUSED BY LAPAROTOMY.

BY

W. GILL WYLIE, M.D.,

New York.

IN a paper read before the New York Academy of Medicine, January, 1885, on "Diseases of the Fallopian Tubes," and published in the *Medical Record* of January 24th, when describing the operation, I said: "In introducing the sutures in the abdominal wall, I am careful to secure, not only perfect coaptation of the peritoneal coats, but also of the deep and thick

abdominal fascia; for, if good union of this is secured, the risk of ventral hernia is very much lessened, because it is this tissue, and not the muscles which are longitudinal, that gives strength to the abdominal wall in the median line. In sixty-seven laparotomies done in the past year, eight were for ventral hernia, six women being operated upon, two of these requiring a second operation. In five of the six cases, the herniæ were the result of laparotomies; in all of these, drainage tubes had been used. Three of the five were laparotomies that I myself had done, and I know of two others occurring after my operations.

This experience has led me to make more or less a study of this subject. Except an incidental reference to hernias after laparotomies occurring here and there, and a short account by Hegar and Kaltenbach, there is literally nothing that I can find on the subject in medical literature. Hegar, in a paper lately contributed to the *American Journal of Medical Sciences* on "Castration in Nervous Diseases," speaks of eventrations and gastrocele as injurious results due to the operation.

Dr. T. G. Thomas, in the last edition of his book on "Diseases of Women," page 755, under the head of "After-Treatment in Ovariectomy," says:

"The patient should be cautioned against rising too early after convalescence. Even after she is able to go about, she should be very careful not to make any violent efforts, and for a year or two she should wear a well-fitting abdominal corset to guard against ventral hernia. I have had this occur in several cases. The abdominal walls were separated over a space measuring about four inches, and the intestines were supported only by skin, areolar tissue, and peritoneum. In one case, these yielded to pressure, and, one year after ovariectomy, a tumor about the size of a kidney, with a mass of attached omentum, escaped. The occurrence of ventral hernia is not the result of any bad management on the part of the operator. It may occur in any case, and sometimes comes on when no operation has been performed."

In large ovarian tumors, the walls are frequently thinned out by pressure, and now and then an umbilical hernia already exists before the operation; but even in these cases, hernia after laparotomy can almost always be prevented by a proper operation; and, as a rule, when hernia after laparotomy does occur, it is due to the fault of the operator, rather than to want of care on the patient's part after she is allowed to get up. It is not the

age of the scar that gives strength, but the exact apposition of the divided tissues. A few weeks is all that is needed for the healing of such a wound, and years of time will add but little strength to imperfectly adjusted and badly united edges. It may take time for the intra-abdominal pressure to stretch the scar apart and form a hernia; and I think much of the faulty scar, especially that formed by the lymph around a drainage tube or a stump clamped in the abdominal walls, is absorbed by time, and thus makes the starting-point for a hernia to wedge itself out, in spite of the best bandages.

Hegar and Kaltenbach, "Operative Gynecology," 1881, writing of the sequelæ after ovariectomy, page 297, speak of hernia after laparotomy as occurring especially among the lower classes, and recommend Simon's method of operating for ventral hernia.

Causes and Prevention of Hernia after Laparotomy.

To speak of the causes would be to indicate the prevention. Failure to secure perfect apposition of the edges of the abdominal wound is, without doubt, a very common cause of hernia. The necessity for bringing together the edges of the peritoneum seems to be very generally recognized, but most operators entirely overlook the fact that the deep fascia which divides and forms the sheath of the recti muscles, and unites in the median line to form the linea alba, is in reality the tendon of the transverse abdominal muscles; that it is this fascia, and not the recti muscles, which gives the abdominal walls their transverse strength. The recti are longitudinal and are readily pushed aside by a wedging or separating transverse force; as a rule, this thick fascia is cut over one of the recti, and not in the linea alba. If it is cut longitudinally over, say the right rectus, the fascia retracts to that side, and the muscles roll out. When the wound is closed, unless the retracted fascia is caught by forceps and pulled up over the protruding muscle, and thus brought into apposition with the other side, the muscle or adipose tissue will separate the edges of the fascia and leave a weak spot in the wound. After a time, when the induration caused by exuded lymph has softened, or the new connective tissue atrophied and been absorbed, a hernia will begin. After the removal of a large tumor that has for some time stretched and thinned the abdominal walls, there is usually very little tension, and it is

much easier to secure perfect apposition; but when the tumors are small, and the patient fat, the intra-abdominal pressure is often great, and the retraction of the fascia extreme. To secure good apposition, I always have my assistant ready with forceps to pull up the retracted edges as I am putting in the sutures; and when the intra-abdominal tension is excessive, I often sew the edges of the fasciæ together with separate sutures, or a continuous suture, after I have inserted the deeper ones; of course, tying the latter as I proceed, so as to avoid the chance of catching a loop of intestine with my deep sutures.

Where it is possible, I make an effort to have the omentum down over the intestines in contact with the wound: for, in many cases, the line of incision, where the peritoneum has been divided, becomes adherent to the tissue beneath, and I think hernia would be less likely with an adherent omentum than intestine. As a rule, the longer the incision the greater the risk of hernia, and I think I have noticed that, the lower the incision the greater the chance of hernia.

Drainage Tubes.—The drainage tube, being a foreign body, is very soon completely surrounded by plastic lymph, and in from twelve to twenty-four hours is entirely shut off from the peritoneal cavity. The lower end may be free in fluid at the bottom of the pelvis; but, unless suppuration takes place or the peritoneum is disturbed by attempts at irrigation, the discharge will, as a rule, cease in from twelve to forty-eight hours. As soon as the discharge ceases, the fluid in the tube gets relatively clear, and the tube should then be removed.

It is now a recognized fact that attempts to irrigate the peritoneum are not only useless, but often hurtful, and large tubes to facilitate irrigation are no longer needed. With rare exceptions, a drainage tube that is not uselessly disturbed, and only emptied by gentle suction as the fluid rises in it, is useless after twenty-four or forty-eight hours. As a rule, a small drainage tube of glass, with perforations for an inch or more at the end, the calibre or lumen about the size of a large lead-pencil, is sufficient to drain off bloody serum or water left after washing out the peritoneum. Where a drainage tube is needed, I always wash out the peritoneum freely. If a large tube is used, as the lymph which fills up the space is gradually absorbed, an opening is left for the beginning of a hernia. By using a small tube, and bringing the edges, not only of the peritoneum,

but the fasciæ, firmly around the tube, the risk of hernia is very much lessened.

In exceptional cases, after the removal of large adherent tumors, bloody serum will escape or can be drawn out of the tube for several days, and as long as there is drainage the tube should be left in, and every few hours emptied by means of a clean suction syringe. A weak antiseptic solution may be used to clean the tube, but never forcibly injected. In those cases where the tube does not become encysted it is because the patient's want of strength, or condition of her blood, prevents the formation of the plastic exudation.

When the sac of a partially removed growth is sewed into the edges of the abdominal wound, or a large stump is clamped or held outside, the tissues plug up the opening very effectually for a time, but after a few months they atrophy and absorb so as to leave a ring or hole covered with scarred skin, through which a troublesome hernia may gradually force itself out. We must make greater efforts to complete the removal of all the sac of adherent tumors and endeavor to learn and practise an intra-peritoneal method of treating the stump of hysterectomy as successfully as we can do by the extra-peritoneal method.

Mural abscess along the line of incisions may cause a separation of the edges of the fasciæ and thus increase the tendency to the formation of hernia.

Adipose Tissue.—Rapid increase of the adipose tissue within the abdomen undoubtedly greatly increases the chances of hernia through any weak point along the line of incision. It is sometimes best to reduce the adipose tissue by a strict diet, both before and after the operation.

Sutures.—If tied too tight they will cause unnecessary pain, and may cut into the tissues. If small-sized thread is used, the number of stitches should be greater. The kind of suture matters very little, provided they are aseptic and kept so by a suitable dressing until removed.

In most cases, if it were not for disturbing the healing of the abdominal wound, the patient might sit up in five or six days, and walk about in two weeks. It is better to err on the safe side, and keep the patient recumbent for about three weeks, but I do not insist upon the patient keeping on her back if she is more comfortable on her side. I have seen no harm from allowing them to lie as they wished. As a rule, for twenty-four to

forty-eight hours they are more comfortable on their backs, with a pillow under the knees so as to flex them slightly, and when a drainage tube is used, I usually keep them in that position, allowing only slight lateral change of position until the tube is removed.

Tympanites.—Following the orthodox ideas about keeping the bowels quiet during peritonitis, until very recently opium has been freely given, and the bowels left undisturbed for at least five or six days, no matter how much tympanites and vomiting there might be. I do not yet go as far as one laparotomist in saying that a brisk purgative will stop peritonitis or sepsis, but from experience I am certain that it is not only safe to give a turpentine or ox-gall enema for tympanites, after twenty-four or forty-eight hours, but that an early movement of the bowels will, when indicated, relieve abdominal distention from tympanites and stop vomiting, and thus greatly lessen the chance of the abdominal wound being disturbed.

Not only are these symptoms relieved, but from some late experience with intestinal obstruction, I am satisfied that some cases which are supposed to be peritonitis (especially those mysterious cases with very little temperature) are in reality cases of intestinal obstruction, and most of these may be prevented or relieved by forcing an early movement of the bowels. I believe that intestinal obstruction very frequently complicates peritonitis after laparotomies, and unless relieved by moving the bowels, it keeps up the vomiting and kills the patient. Early movements after laparotomy not only prevent intestinal obstruction, but they enable us to prevent constipation and straining of the abdominal muscles, as is so common if the bowels are left constipated for several days. Laxatives and enemas should always be used to obviate straining the abdominal muscles, and thus causing a separation of the edges of the fascia, which acts as a ligament to the transverse muscles. Constant or violent coughing may cause separation of the edges of the fasciæ, especially after the sutures are removed. In one of my cases in whom a hernia developed, the patient had an irritating cough, commencing on the fourth day, and continuing more or less for a week.

It is essential, if possible, to control coughing, especially before and just after the time of removal of the sutures.

Supporting bandages or trusses, unless they fit exactly, are

apt to do more harm than good, by compressing the upper part of the abdomen about the waist, and thus increasing the abdominal tension below. When the patient is ready to go about, I instruct them to leave off corsets and all abdominal pressure, to avoid lifting, etc., but unless there are indications of hernia, I do not order a supporting bandage or truss. Wearing bandages after six weeks will not prevent hernias from forming after the bandage is removed, for most hernias occur from absorption of new tissue in cases where there has not been perfect union, or where a drainage tube or stump has left a space between the fasciæ. Therefore, a bandage must be worn indefinitely to prevent hernia, if it prevents it at all.

When they are small, they certainly can often be kept small, and the patient comfortable, by the continuous use of a bandage or truss. It is in such cases that I order them, but many cases will increase in spite of any bandage.

Adhesive straps may keep the edges of the skin together, but they have little influence on the fasciæ.

Operation.—After opening the sac separating the adherent omentum or intestines and returning them to the peritoneal cavity, I carefully dissect out the peritoneum and the deep abdominal fasciæ. Then I cut away the superfluous peritoneum and skin; next I place a number of deep sutures of silver wire or strong silk, then I bring into apposition the edges of the deep fascia with one set of sutures of catgut or small silk, and as I tie the deep sutures, if indicated, I may put in a second set of interrupted sutures in the fasciæ, so as to turn in the first set, and bring together a broader surface than the mere edges of the fasciæ; in other words, if the edges are thin, I may sew the fasciæ with Lembert's sutures. In this way I have got good union, after having failed in a former operation done by the ordinary sutures. The edges of the fasciæ may be retracted an inch or more from the median line, and it is very tedious work to dissect them out and get them into good apposition.

In those cases complicated by old sinuses, care should be taken to destroy or remove all of the old pyogenic sac, and to remove the nucleus of this sac, which is usually the thread with which the pedicle of the original operation was tied.

Hegar and other German operators seem to have adopted Simon's method of operating for ventral hernia, which is done by denuding an elliptical band of skin on either side, and bringing

it together over the reduced hernia. They endeavor to make a skin bandage over the hernia. This might answer temporarily, but could not be relied upon to last long.

INTERSTITIAL FIBRO-CYST OF THE UTERUS.—LAPAROTOMY.

BY

W. M. HARSHA, M.D.,

Decatur, Ill.

ABOUT the first of May, 1886, I was consulted by Mrs. B., a widow *æt.* 28 years, weight 160 pounds, height 5 feet. I then obtained the following history: Age at marriage 15 years. Menstruation established the same year. Miscarriage at the fourth month two years afterwards. Lived with her husband nine years, but had no children nor other pregnancy.

Dysmenorrhea began at the age of 20 years, after which time menstruation increased in quantity, was regular, but gradually became more painful from year to year until the patient was operated upon. During the last three years, she was confined to bed several days at each period. At the time of examination, she was suffering intensely from dysmenorrhea, and troubled with frequent micturition. The abdomen was as large as in pregnancy at the seventh month. A cystic growth behind and to the left side of the uterus fixed that organ close against the top of the pubic bone. Fluctuation was distinct on bimanual examination. The depth of the uterus was normal.

I was inclined to the opinion, expressed by other physicians who had treated her, that she had an ovarian cyst; but advised an exploratory incision with a view to make a positive diagnosis, and further to operate for cure if possible. Consent was not then given; but instead of obtaining relief as usual after the menstrual flow had ceased, the pain continued and was so distressing that the patient, expressing a fear that she would burst, begged to have the operation done at once. On May 13th, assisted by Drs. W. J. and C. Chenoweth and W. A. Fisher, we made an exploratory incision, and on reaching the peritoneal cavity found a tumor the size of the pregnant uterus at the seventh month. The walls were observed to have a muscular appearance and were more tense and resisting than those of an ovarian cyst. It grew from the left posterior and superior portions of the uterus and had no attachments elsewhere.

An exploring trocar drew off some dark, coffee-colored sero-sanguinolent fluid, and produced contraction of the cyst-walls which seemed uniform in thickness throughout.

As the cyst was emptied by a larger trocar, the walls were found to contract gradually until after the withdrawal of about five quarts of fluid, when the uterus presented simply an enlarged appearance. A dilator was used and the uterus explored to make sure there was no connection between the cavities.

After cleansing the peritoneal cavity, some oozing continued. A drainage tube was put in and the abdominal wound was closed with silk. Usual antiseptic precautions were observed, except the spray. Next morning the temperature was 102.5° . Opening the drainage tube evacuated an ounce of the dark fluid. The tube was removed and the angle of the wound left open—covered by antiseptic absorbents. Recovery was rapid, with no febrile symptoms. There was entire absence of nausea and vomiting, and the marked difference in this respect between this case and the ovariectomies I have done, corresponds with the suggestions of some authors, that the constriction of the pedicle has much to do with the causation of this disagreeable symptom. In reference to the diagnosis before an exploratory incision was made: none of the fluid was drawn for examination; but I feel sure that under anesthesia the uterine character of the tumor, which was indicated by the long duration of the trouble and the well-nourished state of the patient, could have been made out with certainty by the periodical contractions of the uterus, which without anesthesia were obscured by the great thickness of the abdominal walls. Recent examination discloses no renewal of the accumulation, and menstruation continues to be normal.

HYSTERORRHAPHY.

BY

HOWARD A. KELLY, M.D.,

Philadelphia, Pa.

It has come within the experience of every one extensively occupied with gynecology, to meet with cases of retroflexion, where the associated symptoms were so severe as to render the patient a constant sufferer and utterly unfit for the ordinary duties of life. In some instances, while the fundus may be readily anteverted, the atrophy which has taken place at the angle of flexion renders all attempts to secure any permanent reposition, by means of support per vaginam, utterly futile; while in other cases, fixation by means of broad bands of strong adhesions at once contraindicates any vigorous efforts at reposition.

tion. It is my purpose here formally to propose, and to formulate rules for the adoption of a new operative procedure in the treatment of these intractable cases of retroflexion, and of prolapsus uteri; the method proposed being applicable only to cases in which the local disease is rendering the patient's life one of misery, and all ordinary means of relief have been found useless. In retroflexions of this class, the marked tenderness of everything in the immediate neighborhood of the uterus, with the characteristic oblique ¹ pains, and the menstrual exacerbations, coupled with actual chronic structural changes often found in the ovaries, have rendered these cases a fertile field for the removal of the appendages. It is my belief that in some instances this serious operation can be avoided, and the patient permanently relieved if, instead of cutting off tubes and ovaries, the retroflexed fundus is simply lifted up and attached, by suture, to the anterior abdominal wall. Then, with the changed position of the viciously posed organ, and the suspension of congested ovaries and tubes, cure may result in cases previously thought irremediable, and without detriment to function. Or, in the event of the removal of the appendages for actual disease, if the uterus does not remain in proper position when raised, the cure will be hastened, and even a bad result often avoided, by a simple suspension to the abdominal wall.

Further, if it be ever necessary to resort to any supra-public operation for the relief of prolapsus uteri, the method of direct suspension here proposed offers advantages mechanically superior to the exsection of the round ligaments. This subject will be discussed further on.

In accordance with the principles here laid down, the term "Hysterorrhaphy" is used to define the *suspension by suture* of a *viciously posed uterus*. Etymologically, hysterorrhaphy includes all cases of operative interference in which sutures are employed upon the uterus, but it is not here intended to cover those cases in which suture of a mutilated organ forms an integral part of another operation, as the removal of myomata, of pregnant horns, Cesarean section, or even those cases of the latter in which the uterine wound and the abdominal wound have

¹ I use the word "oblique" to specify the pains which women feel in the right or left ovarian region, and often explain by laying the ulnar border of the corresponding hand, with fingers pointing to the pubis, about two inches above and parallel with Poupart's ligament.

been stitched together. Closely related, also, to this is the extra-peritoneal treatment of the ovarian pedicle—a method now universally abandoned on account of its great dangers, and therefore not considered as bearing upon the subject.

Historical.—It had long been my intention to open the abdomen and attach the fundus uteri directly to the anterior abdominal wall, in the first case of retroflexion which resisted all other treatment, when the opportunity presented itself in the following patient :

Miss W., 27 years of age, had been under my care for two years, having suffered since childhood from chronic ovarian disease and retroflexion, the first being a consequence of the latter, which was brought on by a fall. Her condition was miserable; she suffered from constant distressing bearing-down feelings, always aggravated and sometimes agonizing at stool, from dysuria, and inability to walk without great pain. The right ovary, enlarged by follicular dropsy, lay prolapsed in Douglas' pouch, and was so exquisitely tender that I fully concurred with my consultant in the opinion that its removal was necessary for her relief.

Vaginal oöphorectomy was performed in the spring of 1884, after persistent painstaking efforts to relieve her condition by counter-irritation and packing, combined also with months of rest in bed. No means at my command had availed to keep the fundus in position even for a few hours. She was but slightly relieved by the operation, and on April 25th, 1885, about one year after, I again operated with the intention of stitching the retroflexed fundus to the abdominal wall. With the assistance of Drs. Joseph Price, J. B. Risk, and Radcliffe Cheston, I made a small incision, two and one-half inches in length, through very fat belly walls, removed the left tube and ovary, and upon feeling for the tube belonging to the right ovary, which had been removed per vaginam, could only detect a number of firm cords in the right broad ligament. I concluded that, inasmuch as the gland was gone, its duct had atrophied. In this the subsequent history proved me mistaken, an operation for right hydro-salpinx becoming necessary after another year. I then picked up the heavy non-adherent fundus and felt in the angle of the sharp cervical retroflexion a depression filled with hard transverse bands of cicatrix-like tissue. As soon as my hold was relaxed, the fundus dropped into its old place, and it was at once evident why all external attempts at permanent reposition had failed. I ligated the left cornu at two points (v. Fig. 1), a half centimetre apart, and between the two passed two silk sutures down through the uterine tissue and up into the abdominal wall, through the parietal peritoneum, a few millimetres into subjacent tissue, and out through the peritoneum again; these were then firmly tied, thus binding the displaced uterus in ante-position about four centimetres above the pubis to the left of the incision, which was

next closed with silkworm-gut. Her convalescence was slow, owing to a large stitch-hole abscess, caused by including too much tissue in one set of sutures. The uterus, thus placed, remained in perfect position, regained its normal size, and lost all sensitiveness until a year later when the right tube enlarged, hung back into Douglas' pouch, and just before the third operation, by its weight and adhesions, again retroverted the now healthy organ. This tube, full of mucoid secretion, was removed through an incision made a half an inch to the right of the old cicatrix. The uterus was found perfectly healthy, no trace of scar tissue, and remained erect as soon as elevated; there was therefore no necessity for stitching it up again.

Koeberlé ["Handbuch der Frauenkrankheiten," Billroth u. Luecke, Band I., p. 767, Stuttgart, 1885] has performed laparot-

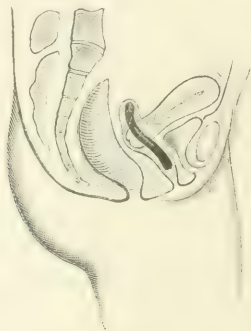


FIG. 1.

omy in a case of chronic obstruction, raised the uterus out of Douglas' pouch, and sewed it into the abdominal incision. The case was cured. See Olshausen's paper quoted below for a fuller account of this case, in which healthy ovaries were removed and the stumps fastened up.

Lawson Tait, Feb. 26th, 1880 ["The Pathology and Treatment of Diseases of the Ovaries," N. Y., William Wood & Co. pp. 94 and 95], operated upon a patient, aged 32, who had been under treatment by Graily Hewitt for four years for retroflexion. Hewitt had used all his great skill in mechanical treatment, "but without the slightest benefit, in fact, she got continually worse." Tait says further:

"I found the uterus quite bent upon itself backward, and so

retroverted as to be almost turned upside down. The fundus was very large and soft, . . . the organs were so excessively tender that, without ether, the examination was impossible."

At the operation it was found that "the ovaries were enormously enlarged, but not cystic; the fundus was soft and spongy, and nearly three times the size it ought to be in a virgin. There were no adhesions. After removing the ovaries, and whilst closing the wound, I passed a stitch through the fundus and fastened it up to the abdominal wall. She recovered perfectly. . . . The uterus is now perfectly straight and normally hung, and it is quite of the senile size." Tait operated again in a multiparous woman æt. 33; she had suffered ever since her first confinement, for eleven years, and at the time she consulted Mr. Tait, was in an utterly depraved condition from the pain and hemorrhages lasting half the month. "She had been under the hands of quite a number of specialists, both here and in London. . . . She had been told that the womb was bent over backward, but that there was a tumor on either side of it. The tumor in question I found to be enormously enlarged and very tender ovaries, lying behind and below a retroflexed and retroverted fundus, which felt so large that it might readily have been a question whether or not there was a myoma in it. From my previous experience, I was of the opinion that fundal enlargement was due merely to chronic fundal metritis, though I was quite prepared to find a myoma at the operation." "The immediate arrest of the hemorrhage, which had been uncontrolled, even by hypodermic injection of ergotin, would alone have been a sufficient warrant for the ovariectomy, but there were numerous other reasons in its favor. I therefore performed it on April 9th, 1880, and found the fundus enlarged from chronic fundal metritis only, the ovaries enlarged from chronic interstitial inflammation, and the displacement as I have described it. I removed the ovaries and stitched the uterus up to the wound as in the previous case." The relief afforded in this case was followed by a relapse of severe pain in the back, due, it was believed, to some focus of inflammation in the peri-uterine tissue.

I am indebted to Dr. Sänger for the two following cases, of which he handed me a written record on the 25th of June, of this year. I am especially indebted for his courtesy in refraining from mentioning his cases when the subject was broached by Prof. Olshausen, at the recent Berlin Congress in September of this year. Saenger's cases are the following:

Two cases of suture of the retroflexed uterus into the abdominal wound, concurrently with the operation of castration.

"I. *Ludera*.—About 28 years old, married, sterile. Removal of the left uterine appendages, for prolapse of the left ovary and tube, peri-öophoritis sinistra, and violent ovaralgia, on the 4th of November, 1885.

"On the 7th of May, 1886, removal of the appendages of the right side, which were found quite normal at the first operation, for like reasons, and at the special desire of the patient. The co-existing retroflexion of the uterus (also chronic metritis) was treated in vain with the Hodge pessary. It was impossible to keep the uterus anteverted. Therefore, at the second operation, the uterus was anteverted by combined action through the vagina and the abdominal cavity, and stitched to the lower part of the abdominal wound by means of two silver ligatures passing through the right ligamentum latum close up to the cornua uteri. On the first few days, rather severe ardor urinæ (pressure on the bladder), a small stitch-hole abscess. After recovery, the uterus remained anteverted.

"H. *Sebal*d, about 38 years old, married; had had nine children, the last eight years ago. On the 13th of May, 1886, castratio duplex. Small cystoid degeneration of the ovary the size of an apple; peri-oöphoritis; peri-salpingitis; on the right side, peri-oöphoritis, peri-salpingitis chronica. For years, violent pains in the lower part of the abdomen. In addition, retroflexio uteri, which had been treated in vain by pessaries.

"At the time of operation, the uterus was stitched into the abdominal wound as in the first case. During the first few days, some fever and trouble with the bladder; otherwise, uninterrupted recovery. The uterus remained anteverted.

[SIGNED.] Dr. M. Säng*er*, Leipzig, 25th June, 1886."

Prof. R. Olshausen, of Halle, in a paper entitled: "*Ueber Ventrals Operation bei Prolapsus und Retroversio Uteri.*" delivered before the fifty-ninth meeting of the Gynecological Section of the Naturalists' Society at Berlin, has urged this operation with great force, citing two cases in which he performed abdominal section for the express purpose of stitching up a displaced uterus. The methods recommended are very similar to those here detailed. Prof. Olshausen considers one important danger to be avoided is that of injury of the deep epigastric artery, in passing the suture from the horn to the abdominal wall. This artery is readily felt by its pulsation, and thus avoided. He recommends several sutures to fix the uterus to the wall.

Where the function of the tubes is not to be considered, these can be satisfactorily included in the sutures. He has used cat-gut, silk, and silkworm-gut, giving the latter the preference. He proposes to use thick silver wire in the future. The cases were the following; one of retroflexion with adhesions, one of prolapsus uteri:

The first patient 44 years of age, and married; had long been

sterile. She was in miserable condition bodily and mentally, suffered from a high degree of dysmenorrhea, and complained of severe pains in back and body. Also of headache, loss of sleep, and, above all, of great difficulty in moving the legs. The patient was able to walk half the length of the room with great difficulty, and then gave out completely. These symptoms had existed for years and were steadily growing worse. The examination revealed marked retroflexion, with broad fixation of the posterior wall, but without any other recognizable complication. The ovaries could not be felt. Attempt partially to replace the uterus failed entirely. Other treatment improved her condition so little that operation was advised and performed. The adhesions were found and separated by means of Cooper's scissors. After freeing the uterus and the left ovary, which was imbedded in the adhesions, the former was stitched by its cornua, in the manner described, with silkworm-gut. Ovaries were removed in this case because their function was superfluous, and the amenorrhea thus brought about could not but assure the success of the operation. The castration was not the purpose of the operation, but was thought advisable at the time of the latter. The operation was completed exactly in one hour. . . . Most of the time was taken up in freeing the uterus from the rectum. Up to the present, I can only say in regard to the result of the operation that the patient left the clinic in four weeks, markedly improved, and could soon take walks of twenty minutes or longer. The fundus uteri could be felt, six weeks after the operation, close against the belly wall.

The second case was one of the lower classes: a woman of 41, suffering from prolapsus uteri. She remained sterile through twenty years of married life. The case was first seen in 1869, when the prolapsus was complete. All sorts of pessaries were tried in vain, and in 1873 a colporrhaphy was made, which resulted in failure a half a year later. In 1878, the vagina was obliterated, leaving only a small opening, large enough to admit a sound on either side. The patient returned in a year, the prolapse as bad as ever. She now readily consented to a laparotomy. The operation succeeded without difficulty. The ligamenta rotunda were stitched to the abdominal wall by means of silkworm-gut, close to the uterine origin. The whole operation lasted twenty-two minutes. Unfortunately, in this case, the end was not attained. Probably, the patient left the bed too soon; anyhow, the prolapse has returned, and it is this case which has determined me in the future to use thick silver wire, which cannot tear out, thereby insuring the success of the operation.

I have not been able to follow all the cases, but can say that in one case, in which a prolapsus existed with ovarian tumor in an old woman, which was treated in this way, with silk suture, the fundus uteri remained high above the pubis a year and a half after the operation, and could be felt in close contact with

the abdominal walls. Another case of retroflexion was found, ten months after stitching the ligamenta rotunda with catgut to the abdominal walls, and after castration, exactly in the position thus given to it. After having long projected this operation, Prof. Olshausen was only induced finally to have recourse to it in such cases as these, hopeless under any other plan of treatment.

He goes on to say: "In 1877, Koeberlé performed laparotomy for retroflexio uteri, removed two healthy ovaries, and united their stumps to the abdominal wound. Serious as were the consequences of laparotomy at that time, to-day the matter has assumed another aspect. For, by exact observation of anti-septic precautions, a simple laparotomy can be made with certainty to exclude sepsis. Since July, 1882, I have lost, out of one hundred and ninety consecutive ovariectomies, not a single case from sepsis. . . . And how much simpler is the operation here described for prolapsus than most ovariectomies!"

"In considering whether this operation has any disadvantages, we must look, above all, to the function of the bladder. In my experience, there have been no difficulties here. On the contrary, several patients suffered less from *ardor* after than before the operation. We must also consider the relation of subsequent pregnancy to the fixation. It would appear probable that abortion might follow; but that this would be a necessary consequence we cannot say, as experience has often shown us that adhesions, as in retroflexio uteri, under the influence of pregnancy, may attain a remarkable elongation. It were better, however, to limit the operation to those patients whose age or condition makes pregnancy improbable. I must insist, however, that I would be completely misunderstood if it were to be thought that I would give the operation a wider field. Only in rare, unconquerable cases of adherent retroflexion or prolapsus do I believe that the operation is justifiable. An improvement in the technique of the operation is to be hoped for, which will insure the certainty of its results."

In the discussion following this paper, several cases were reported by members present. Herr Frank, of Cologne, remarked that he had seen several similar operations performed by Bardenheuser (Cologne), some six years ago, after castrating. The pedicles were brought out of and united with the abdominal

wound. In spite of this, they yielded and allowed the uterus to sink backward. Herr Hennig (Leipsic), on the other hand, called to mind a case of cure (vide *Centralblatt f. Gyn.*¹), where, on account of violent hemorrhage after castration, he had attached the greatly enlarged and inflamed uterus, after a somewhat modified Koeberlé method, to the wall. The case is now completely cured. Czerny, of Heidelberg, in the discussion following Fraenkel's paper, September 20th, "Upon the Results of Treatment of the most common Forms of Retro-deviations of the Uterus," announced that he had in two cases of fixed retroflexed uterus made abdominal section for *retentio alvi et urinæ*, and stitched the uterine body to the anterior abdominal wall with chrome-catgut sutures. After releasing false membrane, the tubes and ovaries were found degenerated, and removed at the same time. The difficulties in defecation and urination ceased after the operation.

I extract the following from Carl Schroeder's "Handbuch der weiblichen Geschlechtsorgane," Leipsic, 1886, p. 208 :

"P. Mueller (*Correspondenz-Blatt für Schweizer Aerzte*, 1877, No. 13) has lately performed laparotomy in two cases, in which the prolapse was complicated with uterine fibroid, extirpated the uterus, and fastened the pedicle into the abdominal wall, for the radical cure of the prolapsus. I have myself, on several occasions when performing ovariectomy, stitched a prolapsed uterus high up in the abdominal wound."

It is also probable that some similar operation is referred to in the following quotation from Mr. Skene Keith (Edinburgh Obstetrical Transactions, vol. X., p. 167), in the discussion upon Dr. Sinclair's paper, entitled: "A Case of the Alexander-Adams Operation: "

"Mr. Skene Keith agreed with Dr. Croom's remarks about the difficulty experienced in finding the ends of the ligaments. In the one case he had operated on, the operation lasted nearly an hour and a half. The patient had suffered from symptoms due to retroversion for eleven years. After the operation, she was kept in bed for five weeks until the wounds healed. The uterus was found to be slightly anteverted nine weeks after; but two weeks after that the old pains and sickness came back, and the sound passed backward with almost as marked a curve as before operation. *The uterus has now been fixed to the abdominal wall.*" [Italics are my own.]

¹ Unfortunately I am unable to verify the reference.

Analysis and Discussion.

It is manifest, from the quotations cited above, including my own case, that the same idea has occurred independently to many minds in the gynecological world, and, with some variation of method and more of the indication, the methods followed have been very similar.

Prof. Olshausen's paper came into my hands after the reading of my own before the Philadelphia Obstetrical Society, Nov. 4th, 1886, which I have here modified so far as to include some account of the former, as it contains much important matter relative to the subject. It will be seen that the operation has been performed in cases of simple retroflexion, in retroflexion with adhesions, and in prolapsus. The indications have been of the mechanical disability caused by pressure upon bladder and rectum, and the distress and sufferings of the patient. The details of the operation have differed widely: in one there has been a simple attachment of but one cornu to one side of the incision, in others diseased ovaries have been removed, and their pedicle, included in the incision, while in another, healthy ovaries were removed for the purpose of securing pedicles which were fastened in the incision, or, again, both cornua have been stitched to the walls on either side of the incision, or, lastly, suture has actually been passed through the fundus uteri, and the organ thus hung up.

The method of including the pedicle in the abdominal wound can be but rarely practicable, and is open to many serious objections. It is rarely required in cases of large tumors with a long pedicle, and in ordinary cases of chronic ovaritis with retroflexion, the degree of tension necessary to secure suspension in this manner, or if but one pedicle be included, the lateral version and torsion, together with the severe traction often necessary, are serious elements of danger and complication in an operation which, if it be performed at all, ought to be almost as safe as a simple exploratory incision. Healthy ovaries should never be removed to attain this end, when a far simpler means is at our command; and the practice of passing sutures deep into the muscular tissue of the fundus is altogether objectionable, and not one which will readily recommend itself to the mind of the profession at large. In my own case, the simple suspension of a large heavy fundus, by one cornu, by means of two silk ligatures,

a few centimetres above the pubis, was sufficient to hang it up for one year. Again this good result was maintained throughout several months of traction by a large heavy tube dragging in the opposite direction, and during this time a large boggy infiltrated fundus drained itself completely, and an atrophic cervix was completely rejuvenated, restoring the whole organ to its normal condition. I do not expect any great results from a future use of this procedure in cases of retroflexion with adhesions of the class described. No one would think of operating upon recent cases so amenable to other means of treatment. Adhesions of moderate degree will usually yield to firm packing, massage upon the fundus, and judicious attempts at elevation with the sound. In cases of old chronic extensive adhesion, the associated

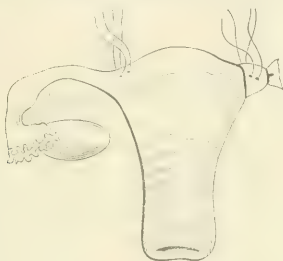


FIG. 2.

changes are usually so great as to render a simple change in the position of the organ useless, and in some cases, the separation of the adhesions would even be an impossibility.

Rules for Operating.—1. Both cornua ought to be utilized, an interrupted or several continuous sutures [v. Fig. 2] being passed through each, and the body thus attached to the anterior abdominal wall, at points on either side of the incision, distant from it a little more than half the transverse breadth of the body.

2. The elected points should be between two and four centimetres above the pubis.

3. If the appendages are removed at the same time, the sutures should be passed directly through the stumps at the cornua, between two ligatures, as already described in my own case.

4. If the operation be performed simply for retroflexion, with-

out removal of the p endages, the sutures may be passed including only the round ligaments, as in Prof. Olshausen's case or better above the utero-tubal junction, the former method being open to the objection that it tends to approximate the anterior face of the uterus to the abdominal wall, offering mechanical disadvantages, which may in time serve to reproduce the deformity.

5. This method should be employed in every retroflexion of the class described, which prolonged treatment through the inferior pelvic strait fails to relieve.

6. It should form the concluding step of every operation upon the appendages in which the uterus has long been retroflexed, and is unable to stand alone when elevated; moderate adhesions even may be severed to effect this.

Prolapsus Uteri.—A most interesting question arises in this connection: What assistance may we expect from this operation in cases of prolapsus uteri, or how far may it be expected to replace the shortening of the round ligaments? I am not prepared to believe on any grounds of theory or practice that a simple suspension, whether by round ligaments or suture, will permanently sustain the whole weight of the uterus, and the pelvic floor dragging upon it, adding to this the great variations of intra-abdominal pressure, continually reinforcing gravity to the disadvantage of the operation. Two points must be attended to before we can cure any case of prolapsus. The fundus uteri must be kept forward and the cervix well backward. If the cervix be allowed to descend, the uterus thus falls more in the axis of the vagina, and will eventually, in spite of every precaution, pass the outlet. All vaginal operations have this in view, by putting in a firm posterior buttress, and by obliteration of the excess of tissue in the anterior wall, to put in a strong bar of tissue running from urethra to cervix, which shall serve as a support to the cervix, and prevent its rolling out.

Those who rely upon this operation alone trust to the chance that the utero-sacral ligaments below, and the tissues and structures in the broad ligaments above, may regain sufficient tone to keep the body in well-marked anteversion. This is sometimes assisted by the accidental condition of a vagina placed more horizontally than usual, in which case gravity and intra-abdominal pressure assist in preserving the anteposition. That this favorable result frequently does not occur is witnessed by the many

failures following operation. Again, those who trust to the simple suspension of the uterus from above to cure the prolapsus, are more obviously irrational in their course, for unless the prolonged rest in bed, which has been insisted upon as a necessary part of this method, be sufficient to allow the vaginal tissues to regain their tone at the same time, the cervix will surely drop, the uterus fall more into the vaginal axis, and its whole weight fall upon the point of attachment, which must sooner or later yield.

It is manifest, then, that any rational operative procedure must keep these two factors well in mind: fixation of the fulcrum at the cervico-vaginal junction, and the keeping of the long arm of the lever, which is the uterine body from this junction to the fundus, in a position of anteversion. It is also mani-

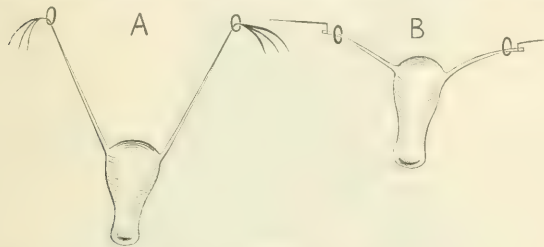


FIG. 3.

fest that if the fulcrum be thus fixed, this long arm just mentioned so preponderates over the short arm, which is the vaginal portion of the cervix (and herein lies the element of success sometimes following amputation of the cervix), that a very slight force, acting at its extremity, suffices to keep it in position. A mere thread will thus hold a heavy fundus in place if the vaginal attachment be so fixed that it cannot descend. I would urge then in all cases in which it is thought proper to correct prolapsus by any supra-pubic operation, that the whole reliance be not placed upon this attachment, but that careful attention be given to the fixation of the cervix, either by preparatory vaginal operation or by a suitable pessary. The mechanical advantage which this method possesses over resection of the round ligaments is great. When the uterus is in a state of complete prolapse (v. Fig. 3, A), traction upon these cords is in the nature

of the direct pull, and the body is lifted without mechanical disadvantage, but as it rises, the pull is exerted more at right angles to gravity, and as the uterus comes more nearly to the level of the inguinal rings, the loss of power is very great (v. Fig. 3, B), and herein lies the chief objection to this method. No such disadvantage obtains in the method of direct attachment of the fundus to the anterior abdominal wall. It is important, however, in the latter operation, when performed for prolapsus, to a far greater degree than when performed for retroflexio uteri, to secure an attachment as near as possible to (three centimetres above) the pubis, without interfering with the function of the bladder; for a high elevation of the fundus brings the axis of the uterus more nearly in a line with the axis of the vagina, and holds it, consequently, more liable to redisplacement.

IN MEMORIAM.

LUDWIG BANDL.

PROFESSOR LUDWIG BANDL was born at Himberg, Southern Austria, on November 1st, 1842. He pursued his medical studies in Vienna, under such eminent teachers as Hyrtl, Dumreicher, and Carl Braun. He was graduated in 1867, and was appointed privat-docent in obstetrics and gynecology in the year 1875. In 1878 he took charge of the department of diseases of women at the Vienna Poliklinik, and remained there up to his death, although, in 1880, he was appointed to the Professorship (extra-ordinary) of Gynecology in the University of Vienna. During the past summer he was called to fill the chair of obstetrics and gynecology at the University of Prague, left vacant through the transfer of Professor Breisky to Vienna. His death occurred during the first week of December, 1886.

Of Bandl's writings, those which have left their impress on medical literature are: "Rupture of the Uterus and its Mechanism" (1875); "The Behavior of the Cervix during Pregnancy and Labor" (1878); "Contributions to the Operation for Vesico-vaginal Fistula and Uretero-vaginal Fistula" (1880); and the elaborate contribution to "Billroth's Handbook on the Diseases of Women," entitled: "The Diseases of the Tubes, of the

Ligaments, of the Pelvic Peritoneum, and the Pelvic Cellular Tissue, including Extrauterine Pregnancy."

As a teacher, Bandl was popular, as witness the fact that for instruction at his clinic, it was necessary to make application many months in advance. His practice, however, in minor gynecology was not in accord with the modern methods. Like most of his European contemporaries, he had yet to learn the



incalculable advantages which accrue from the use of the Sims speculum, and the left lateral position.

As an obstetrician, he will chiefly be remembered for his earnest advocacy of the existence of the ring which bears his name. This was his hobby, and he rode it hard, notwithstanding the hostile criticism which his views provoked, not only on his own, but also on this side of the Atlantic. He did not live long enough to see the existence of this ring absolutely controverted; but facts, such as those produced by Lusk, in 1884, must have taught him the probability that his name

would not appear, in future treatises on obstetrics, linked with any uterine ring.

It will be generally granted that, in the premature decease of Bandl, the science of obstetrics has lost an earnest worker, at a time, too, when the sphere of his usefulness had been materially widened through his appointment to the professorship at Prague.

EGBERT H. GRANDIN.

AUGUSTUS F. ERICH.

DOCTOR ERICH died suddenly on the morning of December 7th, 1886. He was born, in Germany, in the year 1837, and there received his preliminary education. In 1856 he emigrated to this country, and was graduated in medicine in 1861 from the University of Baltimore. He settled in that city, and there practised his profession to the end.

Professor Erich held the chair of Gynecology at the Baltimore College of Physicians and Surgeons, and proved himself a clear and practical teacher. As a practitioner, he was earnest and successful. Possessed of considerable mechanical ability, he devised the self-retaining Sims' speculum which is known by his name. His contributions to medical literature were numerous, and they appeared mainly in the local medical press.

He leaves a wife and two daughters to mourn, with a wide circle of medical and lay friends, his sudden death.

E. H. G.

CORRESPONDENCE.

DR. WILLIAM GOODELL'S STATISTICS IN OVARIOTOMY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—In your issue of November, Dr. W. T. Helmuth gives a table of ovariectomies performed in this country so far back as 1882. As this table includes my name, and credits me with only sixty-one cases, I wish to continue in your valuable JOURNAL my record up to date.

Since then I have performed 126 additional ovariectomies with 22 deaths, or a ratio of 17.5%. In all, from my first ovariectomy,

on September 28th, 1876, to my last one, on November 21st, 1886, I have performed 187 operations with 40 deaths, or a ratio of 21.3%.

Every one of these cases, up to No. 160, have been published and also authenticated by the name of the family physician, by the weight of the tumor, and the date and the place of the operation. The first sixty-one cases were published in *THE AMERICAN JOURNAL OF OBSTETRICS* of April, 1882. The next ninety-nine cases were published year by year in the *Medical News*, of Philadelphia, where my twenty-seven cases of this year will also appear.

My best record was from November 1st, 1885, to November 6th, 1886, during which time I had thirty cases with one death, and that on the table from the very formidable complications of an intra-ligamentous tumor.

I have never selected my cases, but, like you, Mr. Editor, I have taken them as they came, no matter how desperately ill they were. I can recall but one instance in which I refused to operate, and that was in a case of coexisting carcinoma of the womb. During the past two years I have had fifty-five cases of ovariectomy with four deaths, viz., 7%. This percentage of fatal cases is the same as that of Thornton's for his last 300 cases, the statistics of which he published this year. This great improvement I attribute partly to my riper experience, and partly to the fact that the operations were performed in my private hospital, where every antiseptic detail is fully carried out, and where the patient is wholly under my control.

Very truly yours,

WILLIAM GOODELL.

MARTIN'S OPERATION FOR LACERATED CERVIX.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—Please excuse me if I suggest that your translator of the part of Martin's book on amputation of the cervix has in haste made an error on what may be rather a delicate point (page 1,250, December number *JOURNAL OF OBSTETRICS*): "As a rule, I perform amputation in case of abrasion of the mucous membrane," etc. Martin says ("Path. und Th. d. Frauenkr.," p. 286): "As a rule, I let a scraping of the mucosa precede the amputation." It may be that, in fact, Martin does as the *JOURNAL* says, but, of course, our American abrasion and Martin's Ab-rasio are very different, and I have taken the liberty of drawing your attention to it at once, as the wide circulation of

your JOURNAL may unintentionally increase the number of those who accuse Martin of operating too often for mere "abrasions."

Yours truly, E. W. CUSHING.

168 NEWBURY STREET,
BOSTON, December 26th, 1886. }

[Our correspondent's criticism and correction are true. He is right.—ED.]

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

REPORTED BY THE SECRETARY, DR. H. C. COE.

Stated Meeting, November 16th, 1886.

The President, DR. PAUL F. MUNDÉ, in the Chair.

STEM-PESSARY WORN CONTINUOUSLY FOR THREE MONTHS.

DR. COE exhibited a stem-pessary of the Kinloch variety, which had been kept in position by a large rubber ring. It had been introduced in London three months before, and had been worn continuously by the patient (who was a member of an opera troupe), until her suffering became so great that she came to have the collection of instruments removed. On examination, she was found to have a bad laceration of the cervix, together with a laceration of the perineum through the sphincter; the uterus was large, tender, and anteverted. There were evidences of recent peritoneal inflammation, evidently caused by wearing the stem too long after it had begun to cause pain.

THE PRESIDENT commented upon the impropriety of allowing a patient to wear such an instrument without impressing upon her the importance of removing it promptly when it occasioned distress.

DR. MURRAY asked if the ring would not have kept the uterus in position without the addition of the stem.

DR. COE replied in the affirmative.

URINAL FOR USE IN AGGRAVATED CASES OF VESICO-VAGINAL FISTULA.

DR. DAWSON showed a rubber urinal, devised by Dr. Jay, which consisted of an ordinary rubber ring-pessary which formed the mouth of a long, narrow bag. It was intended to be worn by old women with large vesico-vaginal fistulae, that did not admit of operation, in whom there was a constant dribbling of urine. The urinal was adjusted by simply inserting the pessary in the usual manner; it was self-retaining.

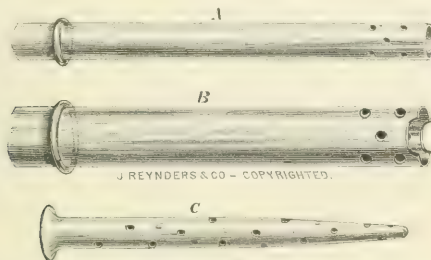
DR. LEE thought that a similar apparatus had been devised by Dr. T. A. Emmet several years before.

DR. HUNTER recalled the instrument used by Dr. Emmet; it did not have a pessary attached to it.

THE PRESIDENT thought that the urinal might be useful in cases in which the fistula was so large that kolpokleisis offered the only means of cure. The only question was whether the pessary would be retained by a capacious vagina, or when the fistula was so close to the vaginal orifice as to leave but little of the canal.

SET OF ASSORTED DRAINAGE-TUBES.

DR. WYLIE presented a set of tubes of various lengths and calibres, which he had brought from England. He called attention to the small size of the tubes which he was now in the habit of employing. The smaller the tube the less the danger of sepsis and the subsequent formation of ventral hernia.



A—4 to 7 inches long.
B—6 to 10 inches long.
C—5½ inches long.

DR. BYRNE asked why some of the tubes tapered towards their lower ends.

DR. WYLIE replied that a tube of this form was more easily slipped through a small hole.

THE PRESIDENT remarked that the collars near the upper end of the tubes were of advantage, preventing, as they did, the latter from slipping farther into the cavity.

DR. WYLIE commented on the greater length of some of the tubes as compared with those used in this country; this was an advantage because, when the abdomen was very much distended by tympanites, a short tube would be elevated so that it would not reach to the bottom of Douglas' pouch.

DR. LEE asked if all the drainage-tubes used in England had lateral openings.

DR. WYLIE replied that they had; however, the holes were so small that omentum or intestine could not be engaged in them. In reply to a question from Dr. Lee, the speaker explained that the collar on a drainage-tube not only prevented it from sinking lower into the cavity, but served to secure the rubber tubing which was slipped over it.

DR. HUNTER objected to drainage-tubes with lateral perforations, regarding the latter as not only useless, but dangerous. He had reported two cases in which omentum had become engaged in the holes.

DR. WYLIE called attention to the small size of the perforations in his tubes as compared with those in the tubes used by Dr. Hunter. The holes secured proper drainage when the lower end of the tube was occluded by a blood-clot, or mass of organized lymph, as not infrequently occurred.

DR. LEE thought, from an examination of the tubes, that their exterior was too rough and uneven, so that injury might be done in withdrawing them.

DR. DAWSON asked why the lateral openings were necessary, since fluid gravitated to the bottom of Douglas' pouch, and then rose through the lower end of the tube.

THE PRESIDENT could not see the advantage of the openings, since a wall of lymph was formed around the tube in a very short time, which would prevent fluid from entering it to any great extent.

DR. WYLIE replied that the patient's condition was sometimes so poor that the lymph did not become organized. He was sure that fluid often entered the holes in the side of a drainage-tube, when it did not rise through the lower opening.

DR. McLEAN said, in reference to the blocking of a tube by clots, or shreds of tissue, that it was nearly always possible to remove the obstruction by carefully raising and lowering the tube.

DR. LEE believed that the origin of lateral apertures in glass drainage-tubes was to be referred to the routine practice of cutting holes in rubber tubing.

VENTRAL HERNIA CAUSED BY LAPAROTOMY.

DR. W. GILL WYLIE read a paper with this title (see page 25).

DR. SIMS said that out of a large number of cases of laparotomy he could recall only two patients who had suffered from ventral hernia; one of these was subsequently cured by himself, the other by Dr. Wylie. Both patients were very fat; in one instance no drainage-tube was used, in the other only a piece of soft rubber tubing. The hernia, which he cured by an operation that occupied four and a half hours (described at a former meeting), was clearly due to the carelessness of the patient herself, who disregarded his express directions. She had had a large mural abscess which healed slowly. The speaker added that he was a great believer in the efficacy of drainage-tubes, and had yet to see a ventral hernia which could be regarded as due to their use. He differed with the reader in regard to the value of the abdominal bandage. He always insisted on having his patients wear a silk elastic supporter as soon as they began to walk about, and to use it for at least a year after the operation.

DR. HUNTER did not believe with the reader that a permanent cord of organized lymph was left after removing the tube. He did not see the advantage of Lembert's suture as used in approximating the edges of the abdominal fascia during the closure of the wound; if the edges were rolled in, the fascia would be less likely to unite than in the case of opposed peritoneal surfaces.

DR. WYLIE explained that he only used Lembert's sutures in order to reinforce those which were placed at the edges of the fascia, when it was necessary to dissect up the latter to some distance.

DR. POLK believed that the surgeon should not hesitate to operate on a ventral hernia that had resulted from laparotomy, because the conditions were generally quite simple; it was necessary only to unite the opposite edges of the different layers. He did not see any special advantage in Lembert's suture, if the fine sutures at the fascial edges were supported by deep, through-and-through stitches. Firm strapping with rubber plaster and a suitable compress would guard against the dangers from coughing, straining, etc. Ventral hernia was less common than it used to be, because laparotomists made a shorter incision and closed the wound more carefully. The operation for the cure of the hernia should be performed as soon as possible after the laparotomy. It ought to be possible to unite the fascia without opening the peritoneal cavity.

THE PRESIDENT remarked that some cases of ventral hernia presented more difficulties to the operator than would be supposed at first sight. He cited the case of a patient upon whom he was about to operate for the cure of hernia following a hysterectomy performed by him; when she was etherized and placed on the table, a more careful examination showed that there were evidences of such firm omental and intestinal adhesions to the abdominal wall, that he thought it wiser to send her back to the ward.

DR. WYLIE closed the discussion by saying that the cure of the hernia was much easier if the operation was performed early, since, if it was long delayed, the tissues became so atrophied that it was difficult to bring the edges together. In very stout women, the operation was exceedingly difficult, if not impossible; in fact, he was in two instances obliged to diet fat patients until they were sufficiently reduced.

Stated Meeting, December 7th, 1886.

The President, DR. PAUL F. MUNDÉ, in the Chair.

SPLEEN REMOVED BY LAPAROTOMY—RECOVERY WITHOUT BAD SYMPTOMS.

DR. J. R. NILSEN exhibited a spleen which he had removed two weeks before, its original weight being two pounds. Reserving the details of the case for future publication, the reporter stated briefly that the tumor was originally discovered during the course of a bimanual examination. It appeared to be situated in the left inguinal region, and was not connected with any of the pelvic organs, but was freely movable from side to side, and could be pushed upward into the abdominal cavity. The patient was seen in consultation by several gentlemen, and considerable difference of opinion existed as to the true character of the tumor. Dr. Nilsen decided that it was a floating spleen. The chief indications for the operation were constant pain in the lower part of the abdomen, increasing tenderness over the site of the tumor, anorexia, coated tongue, foul breath, and other evidences of digestive trouble. The

local pain became so severe that the patient could not lie down; she was deprived of sleep, and became very nervous and irritable, beside being troubled with constant headache, and occasional epistaxis. Her heart was irritable and the heart-beat intermittent. The latter symptoms seemed to contra-indicate operative interference. The blood was carefully examined for evidences of leucocythemia, but the relative proportion between the red and white corpuscles was normal. Being quite sure of his diagnosis, and fearing that an inflammation of the peritoneum over the tumor might lead to its adhesion to the pelvic organs or anterior abdominal wall, he decided to remove the organ at once. The incision was rendered difficult by firm adhesions between the different layers of the parietes, but the spleen was free. Its pedicle was about ten inches in length, and contained an artery having the diameter of a lead-pencil, with an accompanying vein, so large that it presented the appearance of a loop of small intestine. The pedicle was transfixed, and tied in the usual manner. [At the time of going to press, the patient is doing perfectly well, being entirely free from her former distressing symptoms.]

DR. WYLIE asked if the diagnosis had been positively made before the abdomen was opened. The speaker replied that he had done so, although most of the gentlemen who saw the patient, differed with him. In reply to a question from Dr. Wylie, he stated that the prominent symptoms were abdominal pain, sleeplessness, and loss of appetite.

DR. HANKS remarked that, when he examined the patient, the diagnosis was obscure; there was so much local tenderness that he could not map out the tumor distinctly. It was located in the median line, just above the fundus uteri, and could be moved up to the splenic region.

DR. NILSEN said that the low situation of the tumor led him to commit the error of making his incision below, instead of above, the umbilicus; in consequence he could not get at the pedicle near its base, but was obliged to transfix it near the spleen.

DR. EMERSON asked regarding the supposed cause of the enlargement.

DR. NILSEN said that the patient's history pointed to a malarial origin.

DR. COE referred, in connection with the operation of splenectomy, to two cases of abdominal tumor, supposed to be enlarged spleens, in which the operation was about to be performed; on examining specimens of blood from both patients, he found marked evidences of leucocythemia, although this disease had not been suspected. The operations were accordingly abandoned.

IRRIGATION OF THE ABDOMINAL CAVITY WITH HOT WATER IN CASES OF COLLAPSE DURING LAPAROTOMY.

DR. WYLIE described an operation for the removal of a diffuse sarcoma of the pelvic organs, during the course of which the patient lost a good deal of blood from vessels so deeply seated that they could not be secured. She became collapsed, had a rapid, feeble pulse, and was bathed with cold perspiration. A large quan-

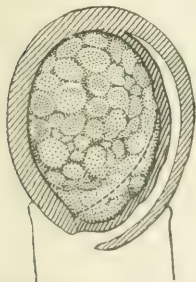
tity of water at 110° F. was introduced into the abdominal cavity, through a rubber tube of large calibre, connected with a bag holding about a gallon. The effect was magical: the woman rallied quickly, her pulse became slower and stronger, and the bleeding was checked. After finishing the operation and introducing a drainage-tube, an additional quantity of water was pumped into the cavity and allowed to run out again. Dr. Wylie called attention to the fact that he had used the hot water, not as a hemostatic, but solely with the idea of counteracting shock.

DR. HANKS remarked that he had seen this method practised abroad, although perhaps not with the express purpose of overcoming shock.

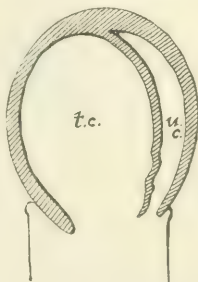
DR. JANVRIN said that the idea was not original with Dr. Wylie, although he had perhaps applied it on a more extensive scale than was done ten years ago, when the intestines were wrapped in hot towels during the course of laparotomy, for the purpose of lessening the amount of the shock.

INTRA-UTERINE FIBROID REMOVED BY VAGINAL ENUCLEATION FROM A VIRGIN—RECOVERY.

THE PRESIDENT presented the specimen (weighing ten ounces), which he had removed three weeks before from a young woman, vir-



Dotted line shows incision through capsule.



t.c. Tumor cavity: u.c. uterine cavity. After operation.

gin, 24 years of age, whose chief symptom was profuse menorrhagia. The external os was dilated, so that it admitted the finger, which could distinctly feel a round mass presenting at the os internum. The operation was very difficult, from the fact that the vagina was quite small. The cervix was divided bilaterally, and ergot was administered for several successive days, then the capsule of the tumor was incised, and the latter was detached from its bed by means of the forefinger and a uterine sound, the mass being forcibly depressed by traction with a volsella. The tumor was finally drawn down to the vulva, the inverted uterus following it. It was detached from its bed, the uterus was replaced, and its cavity was packed with iodoform gauze. The cervix and vagina

were considerably torn during the operation, so that a subsequent operation would be necessary for their repair. The patient had done perfectly well.

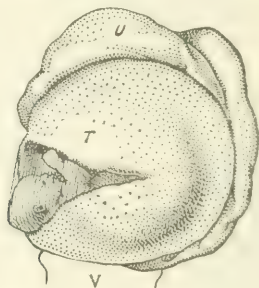
DR. McLEAN asked if it would not have been better to remove the tumor entirely with scissors.

THE PRESIDENT thought that this would have been almost impossible in the narrow space at his command.

DR. WYLIE showed two specimens of intra-uterine fibroids, which he had enucleated by the same method as the President.

EXTRA-UTERINE PREGNANCY—DEATH FROM INTERNAL HEMORRHAGE.
WITH PARTIAL RUPTURE OF THE SAC.

THE PRESIDENT exhibited a specimen of tubal pregnancy, and related the following facts with regard to the patient: She was married, but had never been pregnant. A few days before her entrance into Mt. Sinai Hospital, she had experienced pain in the



Posterior view. *u*, uterus; *v*, vagina; *t*, tube distended by ovum and adherent to Douglas' pouch.

abdomen. On the day preceding her admission, she had a sudden, violent pain and became collapsed. She affirmed that she had menstruated regularly six weeks before. When first seen, she presented the appearance of a person who had lost a large quantity of blood, although she seemed to be in no immediate danger. The pulse was 120, the respiration 24. The abdomen was extremely tympanitic, so that an accurate bimanual examination was out of the question; through the vaginal fornix, however, the finger could detect a diffuse, doughy mass, suggesting the presence of an hematocele. The President made the diagnosis of probable rupture of the sac of an extra-uterine pregnancy and consequent internal hemorrhage, and the question at once arose: Should he operate immediately, or should he temporize? He had just finished a laparotomy, and it was then six o'clock in the evening, so that the light was bad: there was so much abdominal distention that it was evident that, as soon as the cavity was opened, the intestines would inevitably escape, and it would be

very difficult to replace them; moreover, the condition of the patient was not so serious as to indicate the necessity of immediate interference. Ice-bags were ordered to be applied to the abdomen, and she was left till the next day, when her condition had not changed for the worse. She remained about the same from Wednesday until Saturday, when, on making his visit to the hospital, the President was informed that, without any warning, she had suddenly collapsed and died. A post-mortem was obtained with some difficulty, and the diagnosis was fully confirmed as regarded the extra-uterine pregnancy, which was of the tubal variety. The sac was firmly adherent in Douglas' pouch; it had not actually ruptured, as there was only a rent in the peritoneum covering its posterior surface, and this was probably the site of the hemorrhage, which had been so profuse that at least a quart of blood was found in the cavity. The gentleman who made the examination (Dr. Heineman) assured the President that, even if laparotomy had been performed, it would have been impossible to stop the bleeding or to remove all the coagula. In spite of this encouraging opinion, the speaker reproached himself for not having operated promptly, even in the face of the difficulties before mentioned.

DR. JANVRIN said that he possessed a specimen almost identical with the one just exhibited, and that he had written a paper based upon the case (to be published in the Transactions of the Am. Gyn. Soc. for 1886). He would only refer to it briefly, in order to emphasize a point in the pathology and treatment upon which he placed great stress. In the case in question, he had positively diagnosed extra-uterine pregnancy as early as the fifth week. At the end of the sixth week, the patient was suddenly seized with a severe pain in the lower part of the abdomen, attended with symptoms of collapse. The speaker concluded that the sac had ruptured, and decided to operate; but, as the urgent symptoms subsided within a few hours, he decided to wait. There were subsequently evidences of localized peritonitis. As soon as the latter disappeared, with Dr. Rockwell's assistance, he applied galvanism, with the view of destroying the fetus, and supposed that he had been successful. The next morning, after the third *séance*, nine days after the first collapse, the patient was seized with a tremendous hemorrhage, from which she succumbed within forty minutes. At the autopsy, a slight rupture of the superficial covering of the sac was found, involving a small artery, giving rise to slight hemorrhage and a subsequent localized peritonitis. The second and more complete rupture occurred at the same point, and at this time fully two quarts of blood escaped. The speaker inferred from this that, in all cases, of extra-uterine fetation, where transient collapse-symptoms suddenly appeared about the sixth or seventh week or even later, there was a rupture of one of the superficial vessels of the sac, but the final catastrophe did not occur until later. The time to operate was when the preliminary rupture occurred, indeed, the primary collapse-symptoms constituted an almost certain indication both of the pathological condition, and of the need of immediate interference.

DR. HARRISON asked the speaker how many cells he employed during his attempt to destroy the fetus.

DR. JANVRIN said from fourteen to sixteen.

DR. HANKS asked if Dr. Janvrin's case was not the first on record in which rupture of the sac occurred after the use of electricity, and the reply was made that such was the case.

THE PRESIDENT asked the speaker if he advised a resort to laparotomy in *every* case of extra-uterine pregnancy, before resorting to electricity.

DR. JANVRIN replied that he certainly did advise it, as soon as the symptoms pointed to a superficial rupture of the sac, because it was only by removing the sac that one could be sure that the danger of hemorrhage was at an end.

DR. COE remarked that he inferred from the confidence with which Dr. Janvrin spoke of making the diagnosis of extra-uterine fetation that he did not accept the positive dictum of Mr. Tait with regard to the impossibility of recognizing that condition before the abdomen was opened.

DR. JANVRIN replied that he certainly did not agree with Mr. Tait's views; in his opinion, the history of the patient, the presence of a rapidly growing tumor at the side of the uterus, and finally, the sudden occurrence of pain and collapse at the expiration of six or seven weeks, rendered the diagnosis almost certain. He believed that it was easier to recognize this condition than pyo-salpinx.

DR. WYLIE differed with the speaker. He thought that the diagnosis of extra-uterine pregnancy was often extremely difficult, if not impossible, although he had himself diagnosticated it correctly. He recalled two cases in which he had operated for the removal of supposed pyo-salpinx, and discovered that one tumor was an undoubted tubal pregnancy, and the other a hemato-salpinx which probably represented a fetal sac. [The specimens were shown.] He believed in watching a case carefully for a long time, and giving electricity a thorough trial before resorting to laparotomy.

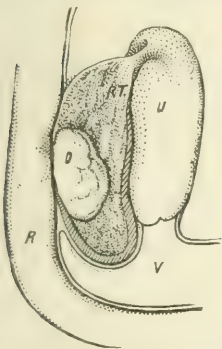
DR. JANVRIN still insisted that the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating mass on one side of the uterus, and subsequent symptoms of shock, could hardly be referred to any other condition, even as early as the fifth week. His own diagnosis had been confirmed in several instances. In a case of this kind he would certainly perform laparotomy whenever symptoms of internal hemorrhage appeared.

DR. HANKS quoted in reference to the last words of the speaker a remark which he had heard Mr. Tait make, to the effect that it made little difference whether the surgeon could, or could not, recognize extra-uterine pregnancy before the abdomen was opened—the only thing to do was to remove it.

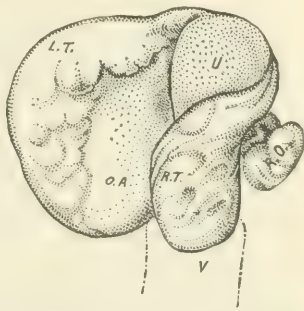
DOUBLE PYO-SALPINX, WITH ABSCESS OF ONE OVARY—LAPAROTOMY—RECOVERY.

THE PRESIDENT showed the specimen, which he had removed several weeks before, the patient having made a good recovery.

One dilated tube was adherent to the bottom of Douglas' pouch, and could be felt per vaginam on a level with the external os.



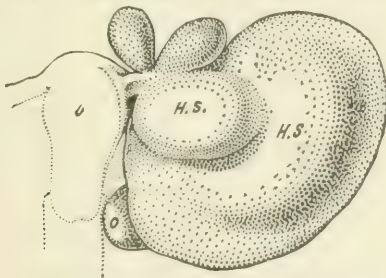
Side view. *rt*, Right tube adherent to Douglas' pouch; *o*, right ovary; *v*, vagina; *u*, uterus.



Rear view. *rt*, right tube; *lt*, left tube; *ro*, right ovary; *oa*, ovarian abscess of left side; *u*, uterus.

HEMATO-SALPINX—LAPAROTOMY—RECOVERY.

THE PRESIDENT presented a fourth specimen, and stated briefly that the tumor at the time of the operation was as large as a coconut, and could be felt distinctly through the posterior fornix. Vaginal aspiration gave thin bloody fluid with probable ovarian corpuscles, and it was thought to be ovarian. From the varia-



hs, Hemato-salpinx; *o*, ovary; *u*, uterus. Front view.

tions in the size of the sac and the simultaneous escape of blood from the os externum during the past two months, it was probable that it had discharged some of its contents into the uterus at intervals. The sac ruptured during the operation, its contents escaping into the abdominal cavity. The latter was washed out with hot water and no bad results followed, the patient recovering.

CAN OLD INTRA-PELVIC ADHESIONS BE STRETCHED BY CONTINUOUS PRESSURE, APPLIED THROUGH THE VAGINAL FORNIX?

DR. H. C. COE introduced the discussion with the following paper:

"I do not pretend to advance any original ideas on this well-worn theme, but simply to introduce the discussion with a few skeptical observations such as will hardly be allowed to pass unchallenged. From certain conversations with the younger gynecologists, I can venture to affirm that I represent their united opinions when I say that it is infinitely more important for us to treat successfully a case of retroflexion with fixation than to perform three or four laparotomies; moreover, we do not indulge in the luxury of abdominal section every day, whereas fixation of a displaced uterus is only too common, both in dispensary and private practice. As a lecturer, a man must appear sanguine, even if he does not feel so; in print, he becomes more cautious in his expressions, while in a medical society like this, where his every statement is liable to be subjected to keen criticism, he will, if anywhere, express his honest opinion. For this reason, I have ventured to bring the present subject before you, feeling that a thorough discussion of a question, which has always been the *bête noire* of gynecology, cannot fail to be of value, at least to the younger members of the society.

In order to be as brief as possible, I shall simply cite a few anatomical facts, observed in the dead-house and at the operating table, which seem to support the negative side of the question, leaving others with more extended experience to fill in the clinical details.

A few elementary questions should first be answered, viz.:

1. What do we mean by '*old*' intra-pelvic adhesions?' What is their pathological significance?
2. What is their usual location in relation to the fornix?
3. Can they be stretched, absorbed, or caused to disappear, by local treatment applied from the side of the vagina?

The softening and ultimate absorption of localized indurations is really a side issue, as the main question involves the mechanical stretching of cicatricial bands, but, since clinically we aim at accomplishing both results simultaneously, they may properly be considered together.

1. By an '*old*' adhesion we mean the end-process of a previous pelvic inflammation (evading the issue between peri- and parametritis), the firm, non-vascular cicatrix, which represents here, as they do everywhere else in the body, the ashes of a former conflagration. The adjective '*old*,' as contrasted with '*recent*,' conveys a perfectly clear idea to our minds; we think at once of the firm, unyielding cords near the bases of the broad ligaments, as distinguished from the delicate tendrils of organized lymph which mark the site of a fresh peritonitis. Why the additional term

'intra-pelvic'? In order to emphasize the fact that the adhesions referred to are not simply cicatrices in the vaginal vault, such as result from extensive lacerations of the cervix. The latter are just as accessible to treatment as if they were on the exterior of the body. I have hinted at the origin of adhesions—their pathological importance is recognized by every gynecologist. Dislocation of an organ, and especially its fixation in an abnormal position, always produces disturbances of function if nothing further, yet the pelvic viscera are peculiarly affected by such displacement and imprisonment. A patient may become accustomed to a heart which beats to the right of the sternum, and may learn to breathe very comfortably when the movements of one lung are hampered by old pleuritic bands. The liver, spleen, and kidneys sometimes indulge in unwilling excursions about the abdominal cavity, and loops of intestine tug for years at old adhesions which tie them to the parietes. All of these conditions we have noted in patients, who nevertheless enjoyed good health and were seldom troubled by the vagaries of their viscera. But the pelvic organs resent the slightest impeding of their movements, and the presence of numerous vascular plexuses, all intimately related to one another, introduces a new complication which is absent elsewhere. These facts are elementary to you, and I need not dwell upon them. It suffices to say that the presence of intra-pelvic adhesions, whether extensive or apparently insignificant, always means some disturbance of the nicely-adjusted forces which, when acting perfectly, render possible the existence of a perfectly healthy womanhood. Whether we attach as much importance to localized cellulitis as Dr. Emmet or not, we cannot deny that indurations in the per-uterine tissues produce friction somewhere in the pelvic machinery. Displacements of the uterus, ovaries, and tubes, traction on the neck of the bladder with its distressing results, adhesion of a loop of intestine to one of the pelvic organs—these are only the more evident results. Others, less easy of discovery by the *tactus eruditus*, are either vaguely suspected, or are not recognized at all until the abdomen is opened.

2. We all know where the evidences of former pelvic inflammation are commonly found, and where we mechanically search for them every time that we examine a woman—in the sacro-uterine folds, and at the bases of the broad ligaments, where the tense cords sometimes stand out so distinctly that they seem to be directly beneath the finger-tip. On adhesions around the tubes and ovaries I shall not dwell. In this connection I venture to repeat my belief expressed in a former paper on pelvic inflammation, that the diagnosis of *parametritis posterior*, or utero-sacral cellulitis, must sometimes be incorrectly made by examiners who, finding the uterus slightly ante flexed, and the sacro-uterine cords tenser or more prominent than usual, at once infer a causal relation and decide that the condition present is acquired ante-

flexion. When Luschka called these folds the '*retractores uteri*', he referred to the contractile power which they possess by virtue of their contained muscular fibres. They certainly do contract in some instances (especially in hyperæsthetic subjects) during a vaginal examination, if firm pressure is made upon them. If the same patient is examined under ether, the supposed shortening of the ligaments will be absent, or at least inappreciable, while the anterior position of the uterus will not be sufficiently exaggerated to justify the diagnosis of pathological antelexion. I mention this fact simply to show that here is a possible source of error in estimating the effect of pressure exerted through the posterior pouch upon utero-sacral ligaments which appear to be permanently contracted in consequence of previous inflammation. This same element of tonicidity in the pelvic connective tissue at once points to a weak spot in a strictly anatomical argument like the present, whether the observations are conducted in the cadaver or in the anesthetized subject, and I am compelled to admit that in this question, as in every other in pelvic pathology, anatomy and clinical observation, or theory and practice, if you will, must go hand-in-hand.

3. I approach the third query with no little apprehension, for, if it is true that the vaginal tampon is not the all-powerful agent in gynecological practice that it has been supposed to be, then, in the words of Paul, 'is our preaching vain, and your faith is also vain.'

To quote from a writer on general surgery: 'Pressure will weaken and make thin a thick cicatrix. So also will massage and mechanical extension.' He has reference, of course, to cicatrices that are accessible to *direct* pressure—but in our case the pressure is *mediate*. The vaginal wall, it is true, does not offer much of a barrier, and the posterior fornix can be deepened to a surprising extent by industrious packing, still the vagina is firmly attached at both ends, and there is a limit to the artificial elevation of its roof. Soon after death, before post-mortem rigidity becomes marked, the fornix is loose and flabby, the contractility of its muscular fibres is eliminated, and it would seem as if the limit of its distensibility could be tested. In my autopsies at the Woman's Hospital I usually make a vaginal examination in the cadaver, before and after opening the abdomen, as a sort of routine. I have tried repeatedly to see how high I could elevate the posterior pouch by introducing two fingers into it and pushing it up with all my force; sometimes I have inserted an unusually large cotton tampon, packing it in more firmly than I should venture to do in the living subject. These experiments were crude both in their purpose and in the manner of their execution, but they could at least be controlled by the eyes and fingers of the house-staff, who were equally surprised with myself at the results of such manipulations, as compared with the same treatment of

the same subjects during life. There are many methods in minor gynecology that are crude (disguise them as we may with high-sounding terms), and the present discussion deals with one which savors somewhat of the medieval.

The subjects presented every variety of pelvic adhesions, many of these, of course, being recent, where death was due to acute peritonitis, but not a few were of long standing. The uterus was sometimes fixed in a position of retroflexion, sometimes thrown forwards by true shortening of the sacro-uterine folds: lateral deviation was occasionally met with. Ovaries and tubes, when present, were not infrequently prolapsed, and fixed in various localities below their normal plane, from the posterior surface of the uterus near the isthmus to the bottom of Douglas' pouch. In short, there were present the usual conditions under which the use of the vaginal 'column' is thought to be indicated clinically. What was the result of pressure applied in the measure indicated? The vaginal roof became arched like a dome, far above its usual level, the entire uterus being elevated at the same time. But, when I watched to see the cicatricial bands put on the stretch by this unusual pressure, I was surprised to find that they did not even grow taut. This was especially marked in cases of retroflexion with fixation. It was only an example of the seeming paradox, that pressure directed against the fundus of a uterus, *fixed* in a position of retroflexion, only tends to draw the cervix backwards, and thus to *increase* the flexion. The cervix was certainly drawn backwards in the experiments referred to, and neither by the eye nor by the finger, could any considerable elevation and forward rotation of the fundus be detected. As for throwing any direct strain upon adhesions by intra-vaginal pressure, I cannot remember that I ever succeeded in separating in this way the delicate lymph-threads which fastened a loop of small intestine to the posterior surface of the uterus. The reason why our pressure is not brought to bear directly upon the adhesions will be evident if you construct mentally a parallelogram of forces, one force acting in the axis of the vagina, upwards and backwards, the other, from the cervical junction backwards, and then find the resultant.

In shortening of the utero-sacral ligaments, it would seem as if direct pressure could be applied to the cicatricial bands, and this was found to be the case in the dead subject, but constant tension could not be maintained, because the greater the force that was brought to bear on the ligaments through the extreme elevation of the vaginal roof, the more the cervix was drawn backwards. or, in other words, the distance between the points of attachment of the ligaments to the sacrum and uterus was not much increased by the intra-vaginal pressure, because the uterine extremity tended constantly to approach the sacral. In retroflexion, with shortening of the utero-sacral cords, the effect was practically the

same—the cervix was drawn backwards, and the flexion aggravated. In both cases, as before, the entire uterus was lifted with the vaginal vault. The principle involved is self-evident—to stretch a suspended elastic cord by a force applied midway between its ends, both of these ends must have an unyielding attachment: this is so much the more necessary if the cord to be stretched is non-elastic. Applying this to intra-pelvic bands—under the necessary conditions, one end of a cicatrized broad, or utero-sacral, ligament is attached to the bony pelvis, the other to the uterus. Is the organ absolutely fixed? The adhesion cannot be stretched except within a narrow limit. Is it movable? It is impossible to *fix* the cicatrized ligament in order to apply a sufficient stretching force to it. Here is an apparent dilemma, no matter from which point of view we regard it.

I have not spoken of latero-flexions due to cicatrices in the broad ligaments, because we must all admit that they are the most stubborn adversaries which the tampon has to oppose. A brief reference to a clinical case will be preferable to any detailed argument. A woman attended my clinic at the Woman's Hospital for upwards of three years, the diagnosis, as correctly recorded by my predecessor, being left retro-lateral flexion, supposed to be due to a shortening of the right broad ligament near its base. The patient came pretty regularly, as such patients go, and was treated in the usual manner, with the hope that the fundus might eventually be raised sufficiently to allow her to wear a pessary. She developed cystic disease in both ovaries, and after an absence of three months, returned to me with two ovarian cysts, each as large as a base-ball, to remove which I operated successfully five weeks ago. The bearing of this case on the present question was this: On opening the abdomen, the fundus uteri was found to be drawn over to a point near the left lateral wall of the pelvis, to which, as well to the left cyst, it was anchored by cicatricial bands which would not yield; in fact, I tore a hole in the peritoneal covering of the uterus in trying to detach it. The organ remains in the same position as before the operation, and will always remain there. What useless labor to try to dislodge it by pressure from the side of the vagina! And how is it with prolapsed ovaries and tubes that have been fixed near the fornix—can their adhesions be stretched? As far as I have noted this point, it has seemed to me that the effect of the cotton column was often to raise the prolapsed organ *and* the surrounding adhesions together, instead of separating one from the other. Judging by my observations at the operating-table and in the dead house, exclusive of clinical, I should infer that the pressure effected through a general ballooning out of the fornix by a firm tampon, was too diffuse to dislodge from its bed of adhesions an ovary, which the surgeon is obliged to dig out with his finger-nails; in other words, the tampon *raises the ovary and its adhesions together, not away*

From each other. I have dwelt simply upon the mechanical process of stretching adhesions, as we teach and attempt to practise daily.

If we honestly believe that this can be accomplished by persistent packing, why is it that we so seldom resort to the only really effective way of applying the greatest pressure, the so-called "cotton column," introduced with the patient in the knee-chest position? The sort of perfunctory, half-hearted way in which many of us (myself, at least) thrust a few tampons behind the cervix, awakens the suspicion that we are not inspired with that cheerful confidence in their power that we ought to feel.

In closing, I should like to put this question to those who will doubtless bring forward numerous clinical cases, which prove beyond doubt that a uterus, fixed in a position of retroflexion, can be freed from its adhesions by the application of continuous pressure: How often is your force applied to these adhesions, and how often does it so act (as Dr. Emmet has shown in his recent paper, read before the British Medical Association) as *simply to elevate the entire uterus to a higher plane?*"

[Discussion adjourned to following meeting.]

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, November 4th, 1886.

The President, B. F. BAER, M.D., in the Chair.

DR. JOSEPH PRICE exhibited specimens from two cases of

PYO-SALPINX.

DR. M. PRICE exhibited specimens from one case; all of these were of gonorrheal origin. Those by Dr. J. Price were removed from prostitutes. That exhibited by Dr. M. Price was from a married woman who had been infected by her husband. The tubal disease manifested itself soon after child-birth. The menstrual period had always been very painful, and had kept her in bed from eight to ten days.

DR. HOWARD A. KELLY exhibited a

SARCOMA,

as large as a man's head, which he had removed from the anterior abdominal wall. It had its origin at the transverse tendinous band of the right rectus muscle, just below the umbilicus. The mass was about eight inches by ten, and hung pendulous under the greatly thickened skin of the right umbilical, inguinal, and iliac regions. The great point of difficulty was in determining before

operation whether the mass did not spring from a small hernia slipped through the umbilical ring, which was greatly drawn out on one side over the tumor and deep in which the fibre-like cords of attachment could be felt. The tumor was very vascular, but was readily removed, and the patient made a perfect non-febrile recovery.

DR. KELLY also exhibited a specimen, upon which he desired a report by the microscopical committee. The case was one of great interest:

AN OVARIAN PREGNANCY.

upon which Dr. Kelly had operated within the past twelve hours.

The patient, a German woman, who had had one child by forceps delivery, two years ago, in Germany, had since been regular in her menstruation until October, when she went two weeks over time, and was then roused in the night by sudden violent pain in the right leg and groin, extending obliquely down the right ovarian region. With the pain came a profuse uterine flow which lasted for two weeks, with intermissions. From excellent health she was immediately prostrated, and became miserable, with elevated temperature and quick pulse. She had no organic disease, but a small tumor at the extremity of the right Fallopian tube. The tumor was about two and a half or three inches in diameter, softish, not sensitive, freely movable in the pelvis. In front of this a sharply defined round ligament could be traced out to the brim of the pelvis, and above this the flatter cord of the Fallopian tube could be felt. The ureters were enlarged, as Sännger had noticed, and the speaker has frequently verified in pregnancy. The uterus was of a size approaching two months' pregnancy, and the cervix was remarkably soft for the early stage of pregnancy. Dr. Kelly sent invitations to Drs. R. P. Harris, J. G. Allen, Freeman, John and Frank Haynes, Jos. Hoffman, Geo. Horn, and Wm. Ferguson, to be present at an abdominal section for extrauterine pregnancy, and in their presence the operation was carried out. (The patient, up to date of publication, has made uninterrupted progress toward recovery.) Dr. Kelly exhibited a chorionic membrane from a uterus, with a four weeks' fetus attached.

DR. BEATES remarked that the lining membrane of the cyst was easily separated from the wall, and he thought the specimen was most probably a parovarian cyst.

DR. JOS. PRICE thought the cyst could be entirely shelled out. He thought it had none of the characteristics of a tubal pregnancy.

DR. KELLY, in closing the discussion, demonstrated in the extrauterine and in the uterine specimens an identical membrane which could be detached, and which was the amnion. He demonstrated ovarian tissue, completely surrounded by the cyst, thus proving that it was not parovarian in its origin. The lining membrane underlying the apparent amniotic membrane is a soft tissue, never seen in an ovarian cyst. The specimen was referred to a committee.

DR. LONGAKER exhibited a fibro-myomatous substance which had been expelled from a uterus twenty-three days after normal labor. The placenta came away entire; there was a post-partum hemorrhage on the second day. In the third week a rise of temperature occurred. The temperature became normal after the expulsion of this mass.

DR. KELLY said that, judged by the macroscopic appearance of the specimen alone, and with great certainty in view of the history, this flat elongate mass, with one semicircular rounded edge, and with long shreds hanging to it, was a portion of a retained placenta. A question is by this brought up, upon which it is of the utmost importance that every member of this Society should have positive convictions, and that our practice should be uniform, and that is, What shall be done in the case of a puerperal woman who has an elevated temperature, and a foul-smelling discharge from the vagina? Where other manifest cause was absent, every such patient should be placed in a convenient posture, and the uterus thoroughly gone over with a dull curette, followed by a swabbing with an antiseptic solution. Thousands of women are to-day suffering from neglect of this simple precaution of removing stinking shreds of decidua and pieces of placenta, which remaining have caused subinvolution, chronic endometritis, and cellulitis lingering for years, or even a more acute and rapidly fatal septic process. Dr. Kelly prefers the lateral semiprone position for convenience of exposure and manipulation, considering the objections which have been urged against this as purely theoretical.

DR. BAER would prefer the patient on her back for scraping or washing out the uterus after labor, using tincture of iodine or bi-chloride solution.

DR. BEATES has made it a rule, whenever the temperature rises after labor, to introduce the finger or curette into the uterus and remove any adherent masses.

DR. LONGAKER, in closing the discussion, said that he had not the slightest doubt that the specimen had been a fibroid tumor, buried in the tissue of the lower portion of the uterus, the contraction and involution of the uterus had cut off its supply of blood and partially enucleated it. Time was required for this process. The rise of temperature did not excite immediate suspicion, as the case was a hospital one, and the wards were crowded at the time.

DR. BEATES, on behalf of the committee, stated that the microscopic examination of the "*ovarian fibroid*," presented by Dr. Baer at the October meeting, showed it to be a neoplasm developed from the epithelium of the ovary; it was a true scirrhus with nothing ovarian about it except its origin.

DR. HOWARD A. KELLY read a paper, written for the Society in the spring of this year, upon a new operation which he called

HYSTERORRHAPHY.¹

DR. DRYSDALE remarked that he had performed a second operation upon a lady upon whom eighteen years previously Dr. Atlee

¹ See Original Articles, page 33.

had performed ovariectomy for the removal of an ovarian tumor; at the first operation the uterus was found prolapsed. In this operation Dr. Atlee had used the clamp to secure the pedicle, and at the second operation the uterus was found attached to the original wound. The prolapse had been effectually cured. He thinks both cornua should be secured to the abdominal wall. He had never met with a case of retroversion that could not be relieved by pessary after curing the accompanying endometritis. Many years ago, a lady who had been for eight years under the care of Dr. H. L. Hodge for retroversion, and in whom the presence of a pessary excited such expulsive efforts that it could only be worn a week at a time, came under the care of Dr. Drysdale. He treated the endometritis first, and when it was cured a pessary could be retained, and complete relief was secured.

DR. JOS. PRICE remarked that Tait considers it dangerous to stitch the fundus uteri to the abdominal wound, and has abandoned it. In some operations, he introduces sutures to draw the uterus high up that he may more readily remove the tube close to the cornua.

DR. BAER thought it seemed the most natural method to stitch the fundus to the abdominal wound. He asked for what reason Mr. Tait considered it dangerous. He thought the field of Dr. Kelly's operation would be small, as, when the endometritis was cured, a pessary or other support would relieve the retroversion or flexion. After laparotomy or removal of the uterine appendages, it might be advisable in some cases to draw the uterus up. He has had no experience with such a procedure. He does not like the Alexander operation; he considers it unscientific, and in many cases it has failed to cure the displacement.

DR. LONGAKER feared that, granting that anteversion could be secured by Dr. Kelly's method, the bladder would not be allowed to expand, a fixed anteversion would itself be pathological. He would hesitate to stitch the fundus to the abdominal wall even after removal of the appendages. Retroflexion does not necessarily produce discomfort, as some cases have no symptoms to call attention to the condition.

DR. HARRIS recalled the case of Mrs. Reybold, whose uterus was suspended for fifty years. She died at eighty. The senile organ was drawn out into a tongue-shape; the uterine attachment was one and a half by three-fourths inches at time of death. The uterus was four and a half inches long, and the vagina was lengthened and cord-like. There had always been a tender spot in the cicatrix, probably from tension.

DR. KELLY stated, in reply, that he considered the main points which had been raised had been already answered in the paper. He considers these cases *rare*, and by no means recommends a resort to section and suspension without first trying every other known expedient likely to relieve, and then only in those cases in which the local disorder causes such pain or disability as to render life a burden. He considers the operation established, however, in those cases in which, after removal of the appendages, the flexed organ fails to remain upright when lifted into position. An occasional resort to hysterorrhaphy will not affect the table of recoveries from operation, but will affect the list of patients *cured*, which is not always made so prominent after abdominal section.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, September 17th, 1886.

The President, DANIEL T. NELSON, M.D., in the Chair.

Dr. JAMES H. ETHERIDGE read a paper entitled:

REPORT OF A CASE OF SUPRAVAGINAL AMPUTATION OF THE PREGNANT UTERUS COMPLICATING A MULTILOCULAR FIBROID TUMOR.

Mrs. A. B., aged 34 years, married several years, no children, first experienced uterine symptoms some four years ago, which Dr. Knox, her medical attendant, recognized as due to a uterine retroversion, and treated with a pessary for six months. On March 10th, 1884, he was again called to her, and found the uterus again retroverted. "This time, however," he writes, "it was apparently fixed in the pelvis; the *os tinæ* was caught firmly behind the pubes, and in Douglas' *cul-de-sac* was a firm sensitive mass that seemed to be more than the *fundus uteri*. There was also considerable abdominal tenderness, fever, and nausea. It was difficult to diagnosticate between cellulitis and simple retroversion with impaction. Careful manipulation, however, in Sims' position, corrected the displacement, with complete relief of the distressing symptoms. Hot fomentations and vaginal douches aborted the threatening cellulitis. Two days thereafter, on careful examination, I detected a subperitoneal myoma on the left posterior aspect of the fundus. It was about half the size of an unimpregnated uterus. This accounted for the tight impaction of the retroverted organ.

"A pessary was again introduced, and twenty-minim doses fluid extract of ergot, three times a day, ordered. The drug was faithfully taken for about twelve months. During that time a second fibroid appeared upon the right lower and anterior surface of the womb. These tumors steadily enlarged until the uterus was lifted entirely out of the pelvis. Excepting the results of mechanical pressure, the patient's health was excellent, and menstruation was undisturbed.

"April, 1885, the ergot was discontinued. Owing to the subperitoneal character of the fibromata, their growth was uninfluenced by the drug."

The growth of the tumor in the last two years has been slow but progressive. In the last six months, it caused no special symptoms beyond vague suprapubic pains at times.

In May, 1886, thirteen months after the stopping of the use of ergot, Dr. Knox was again summoned to attend her for a distress-

ing nausea. At the same time the menses, which had never been excessive, ceased. Mammary changes supervened.

In the ensuing three months, the tumor grew rapidly. To Dr. Knox must be ascribed diagnostic skill of the highest order in determining the presence of pregnancy in such a mystifying condition of things. He decided that she must be pregnant, and awaited the expiration of the first three months to produce an abortion, hoping thereby to produce involution to such an extent as, at least, to arrest the rapid increase in the growth of the tumor. Accordingly, on August 1st, 1886, when the three months had expired, he introduced a sound into the uterus four inches. Its withdrawal was followed by a small amount of blood, the nausea and vomiting ceased, and the mammary symptoms disappeared. Nothing further followed indicating the previous existence of pregnancy or an abortion, and the conclusion was reached that conception had not occurred.

The rapid encroachment on the abdominal organs was progressively killing her. Her strength had greatly diminished. For six months she gradually emaciated. Her sufferings from the pressure of the tumor were great, and eventually led to her giving up and remaining in bed nearly all the time because she thus experienced the most comfort. In addition she was easily put out of breath by exertion.

Forty hours before the operation, she had a free purge, and twenty hours later she went to the Presbyterian Hospital to remain over night, to receive a bichloride of mercury bath and to have her pubes shaved.

At the time of the operation she presented the following measurements:

1. Girth at the umbilicus, 31 inches.
2. From ensiform cartilage to umbilicus, 7 inches.
3. From umbilicus to symphysis pubis, 6.5 inches.
4. From either ant. sup. spin. proc. to umbilicus, 7 inches.

From external examination it was found that the tumor extended from the right iliac fossa across the abdominal cavity in a straight line to the spleen. Its length was, apparently, double or treble its width. It was freely movable, free from adhesions, and solid. It presented great tenderness in the right iliac fossa.

Per vaginam the *cervix uteri* was found very high up in the left iliac fossa and the *fundus uteri* was apparently thrust into the right iliac region. The whole tumor moved with the uterus. A very small resiliency offered to conjoined manipulation led me to think that I had to do with a *fibro-cystic tumor of the uterus*. The sound entered the uterus four inches and seemed to pass towards the umbilicus.

Just before commencing the operation, a sound introduced into the bladder showed that this viscus was not enlarged by being drawn up out of the pelvis by the growth of the tumor.

At the same time, the sound was introduced into the uterine cavity and entered only four inches. It had to be bent at an obtuse angle to make it engage in the cervical canal. Its introduction was attended with a small hemorrhage, which subsequently was the innocent cause of severe but brief alarm.

The instruments used in the operation were dipped in a five-per-cent solution of carbolic acid, and subsequently kept in a two-per-cent solution of the same agent when not in actual use. No spray was used. The sponges were antisepticized with carbolic acid. The details of the operation were simplicity itself. The incision began one inch above the umbilicus and extended down to within an inch and a half above the pubes. It was carried to the left of the umbilicus and measured six inches. Upon exposing the tumor, it was found wholly free from adhesions. It extended to, and pressed upwards, the spleen. It was oblong, its length being about treble its width. It was situated obliquely across the whole abdominal cavity. Its upper end was easily turned out of the abdomen, and the whole mass was lifted out of its bed. Its smooth, red surface nowhere indicated the outline of the uterus. Its lower end seemed to be one solid mass of pedicle extending to completely across the whole inlet of the pelvis from side to side. The laminae of the right broad ligament were separated in the most conspicuous manner that I ever beheld. The two ovaries were attached to the mass on a level with the umbilicus, having been lifted completely up into the abdominal cavity.

After buttonholing the capsule of the tumor as low down as was practicable, it was peeled off as far as the finger could reach right and left, and ligatured in small masses in two places an inch or more apart and then divided between the ligatures. In this way all of the capsule that could be secured in ligatures and cut was soon treated, and the hemorrhage from the operation was barely worth mentioning. The right uterine artery, which was much enlarged, was torn across and quickly secured. All of the spermatic and uterine arteries were secured with double ligatures of No. 14 silk. Thus the apparently large pedicle was much reduced in size and was found to be about equal to the normal *corpus uteri*.

Around this mass was placed a Koeberlé's *serre-nœud*, which was properly tightened, and the tumor excised. Small vessels were then secured. The clamp was then slowly loosened, and the vessels of the stump were tied.

The cervical canal was conspicuously visible in the centre of the stump. It was drawn up by a vulsellum as tautly as possible, and excised for the length of at least one inch. The piece removed was cone-shaped, with its base upwards. Six stitches were then used from side to side, placed so that when tightened the peritoneum was accurately brought together over the top of the stump. They were tied as tightly as they could be drawn. All further bleeding was attended to *secundum artem*, and the abdomen closed

with nineteen stitches. The initial incision was made at 10:30 A.M., the stitches were begun at 11:42 A.M., and the operation was completed at 12:01 P.M.

She rallied from the operation in a few hours. For a period of four days afterwards she had a most intractable vomiting. After feeding by the rectum, and permitting absolutely nothing to pass her lips, this troublesome symptom slowly diminished and gradually disappeared, but not until she had acquired a slightly pinched condition of the *ala nasi*, which brandy caused to disappear. On the third day, an offensive odor proceeded from the vagina. A carbolized solution permanently corrected it. It must have arisen from decomposition of the small amount of blood provoked by the introduction of the uterine sound.

Thereafter naught especially occurred to direct attention to, excepting the following points:

1st. The patient never had an alvine dejection after the operation. Flatus passed only after the colonic distention permitted it through a rectal tube. Repeated efforts were made to secure defecation, without result.

2d. At no time after the operation did she have a chill or sweats. The days were very hot, and her greatest comfort was in being gently fanned and in dabbling her hands in a bowl of water placed at her side.

The pulse was rapid, never going below 110. The temperature never went much above 100° until Aug. 19th, when at 11:50 P.M. it reached 103.2°. At 1 A.M. of the 19th it had fallen to 102°, the patient dying at 6:45 A.M.

The autopsy was made thirty-two hours after death, and revealed a pelvis filled with fluid, consisting of blood and pus. The small intestines were agglutinated over the pelvic inlet, almost hermetically. The surfaces of the small intestines turned towards the cavity of the pelvis presented a condition of sphacelus approaching demarcation. The pelvic cellular tissue was completely honeycombed with pus cavities. The stump presented a shrunken appearance, as though all of the stitches had been loosened, yet no pelvic fluid had found its way into the vagina through the cervical canal. The patient had succumbed to septicemia. I regret I did not drain.

Examination of the tumor revealed the fact that it was a multi-locular fibroma, and that it grew from the anterior wall of the *corpus uteri*. The cavity of the uterus was found on a level with the umbilicus, and contained a three months' fetus in unruptured membranes, evidently alive up to the time of operation. The cervical canal was five and a half inches long, which fact explains the immunity of the membranes from puncture by the introduction of a sound only four inches. The canal resembled the letter U, with its legs pulled apart, starting from the extreme left iliac

fossa at the *os uteri*, it passed towards the umbilicus two inches, and was then deflected at an obtuse angle towards the spleen.

Upon laying open the uterine cavity, it was found to be in appearance a cavernous hollowing out of the posterior surface of the tumor. In front of it was nearly the whole width of the tumor. Its posterior boundary was a wall of uterine tissue thinner than the normal, unimpregnated posterior uterine wall. It was situated in the middle of the tumor.

The membranes presented a leaden-grayish appearance, and were filled with fluid.

The fetus was a male. Its cord was seven inches long and was normally attached.

Microscopic examination of the tumor by Dr. Ochsner shows its character to be purely *fibromatous*. Its weight was about ten pounds.

Remarks.—The removal of fibroid tumors, which are slowly but surely killing patients, has now passed into the category of recognized and justifiable operations. The astonishing successes of Keith in removing them are sufficient guaranty of justification for removing such growths under proper conditions.

But the complication of large fibrous tumors of the uterus with pregnancy presents the gravest possible condition for the surgeon's consideration. Conception seemed to give an impulse to the rapidity of the growth of the tumor under consideration that was very surprising. The arrest of its growth, or its removal were the two horns of the dilemma. Against the production of abortion there are serious objections. It is followed by disproportionately great dangers, and cannot possibly lessen the size of the growth materially. The possibility of uncontrollable hemorrhage from the seat of the placenta on a non-contractile mass of tumor must be faced in producing an abortion. In addition, the dangers of septicemia from puerperal disintegration of the tumor are not to be forgotten. While running the two risks of hemorrhage and septicemia from producing an abortion, there is a very great possibility of avoiding a future extirpation of the whole mass by inducing a cessation of growth of the tumor, or even possibly by inducing a greater or lesser involution of the growth. The examination of the tumor shows conclusively that the uterus could never have extruded the fetus and its adnexa through the elongated cervical canal, because of the inutility of the uterine muscular fibre through fibromatous degeneration. Consequently, abortion would in all probability have proven fatal through septicemia. I am thoroughly convinced that the patient could not have lived many weeks longer without the death of the fetus, when the overwhelming disaster of fatal sepsis would have speedily ensued without any compensatory explanation short of an autopsy, since the idea of pregnancy was about abandoned, because abortion failed to occur; and the non-appearance of the

fetus *per vias naturales* would afford no satisfactory evidence of what had occurred, but, quite to the contrary, would have rendered a mysterious case much more mysterious. In such an event, *sine autopsia*, the pathological reasoning would have been that spontaneous necrosis of the fibroma had occurred, and septicemia followed.

References.—Hegar and Kaltenbach report six cases in the third edition of their "Operative Gynecology," 1886, as follows:

Author.	Date.	Time of pregnancy.	Character of tumor.	Result.
Kaltenbach...	M'ch 2, 1880..	Fifth month..	Myoma.	Recovery.
Wasseige....	M'ch 18, 1880..	Fifth month..	Myoma.	Death 6th day.
Nieberding...	May 10, 1882..	Fourth month..	.....	Death 40 hours P. O.
Schroeder....	June 21, 1884..	Third month..	Myoma.	Recovery.
Schroeder....	June 10, 1884..	Third month..	.....	Recovery.
Walter.....	1883..	Fourth month.	Colloid.	Death 9th day.

Case VII.—Dr. H. R. Storer amputated the pregnant uterus, in a primipara, æt. 37 years, after three days of labor had passed, for a fibro-cystic tumor. The pedicle was constricted by a double metallic ligature, and kept outside. The patient died in seventy hours of septicemia. (*Journal of Gynecological Society of Boston*, October, 1869, p. 223.)

Case VIII.—Prof. S. Tarnier, Neuilly, France, on February 24th, 1879, removed the uterus from a primipara, æt. 33 years, for a fibrous tumor of the uterus, after the patient had been in labor seven days. Condition of patient at the time of operation very unfavorable. The fetus was putrid, gas in the uterus having been found. Pedicle was kept out with a metallic pin and metallic ligature. Patient died of septicemia on third day. (*Annales de Gynécologie*, August, 1879, p. 81.)

Case IX.—Dr. Zweifel, of Erlangen, Germany, on July 31st, 1880, removed, from a primipara æt. 37 years, the uterus several hours after labor began, because of a fibroid tumor in the cervix. Patient died on the sixth day of septicemia. The pedicle was tied with double silk ligature. (*Archiv für Gynäkologie*, B. 17, H. 3.)

Case X.—Prof. Cataliatti, of Palermo, Italy, on October 28th, 1880, removed the pregnant uterus from a primipara, æt. 41 years, for an interstitial fibroid of the posterior uterine wall soon after the inception of labor. The pedicle was kept outside with wire ligature and transfixed with metallic pin. Recovery followed. (*Bulletin dell' Accademia di Medicina di Palermo*, 1880.)

Case XI.—Dr. L. Prochownick, of Hamburg, Germany, performed hysterectomy, April 21st, 1881, on a primipara, æt. 40 years, at seventh month, about twenty-four hours after the discharge of the liquor amnii, for a fibro-myoma of the uterus impacted in the pelvis. The pedicle was held out of the abdomen with Péan's constrictor, two long pins, and stitched to the lower

angle of the wound. The patient died in sixty hours p. o. from septicemia. (*Deutsche Medicinische Wochenschrift*, No. 40, 1881.)

Case XII.—Dr. Fochier, Lyons, France, on November 23d, 1882, amputated the uterus at term, after the patient had been in labor three days, for a fibroid in the uterine cervix. Recovery followed. It was her fourteenth pregnancy. The pedicle was kept out in the lower angle of the wound. (*Lyon Méd.*, May 20th, 1883.)

Case XIII.—Dr. M. Hanfield Jones reported in "Transactions of the Obstetrical Society of London," Vol. XVII., 1886, the case of a woman at term in whom delivery was impossible, because of a subperitoneal fibroid in the true pelvis. The entire uterus and its appendages, with the tumor, was removed, and the cervix clamped. The patient died of peritonitis on the third day.

Case XIV.—Amputation of the pregnant uterus at term, by Dr. M. Hofmeier, for fibroid tumor in the pelvic cavity. Reported by Dr. P. F. Mundé in the *AMERICAN JOURNAL OF OBSTETRICS*, September, 1886, Vol. XIX., p. 905. Mother and child both saved.

Case XV.—Large pediculated subperitoneal fibroid. Pregnancy, two months. Removal of tumor, uterus, and ovaries. Result not stated. Operator, Meredith. Reported by Dr. Mundé in the *AMERICAN JOURNAL OF OBSTETRICS*, September, 1886, p. 923.

DR. CHARLES T. PARKES read a paper entitled

SUCCESSFUL REMOVAL OF THE UTERUS FOR FIBROIDS.

Mrs. L., an American lady, 37 years old, was first examined by me March 11th, 1886. She had been married about nine years, but had never been pregnant. The consultation was held for the purpose of getting relief from an abdominal tumor, which first began to show evidence of its existence some three years ago. The first symptom noticed was a burning pain in the right side, which continued with greater or less severity for about six months, when a small painless tumor was recognized deep in the right groin. This growth continued to enlarge steadily until she saw me, without any exacerbation of rapidity, until during the last six months when it has grown more rapidly and its volume has increased to a greater extent than during the entire previous period of its history. Lately also the patient has lost rapidly in strength and flesh. There has been no interference with menstruation, that function being performed normally the entire time.

The tumor has seemed to diminish in size during menstruation, at least the feeling of fulness was lessened at those periods. The mammæ have not shown evidence of change of any nature. The right leg has swollen slightly for short periods of time and been the site of considerable neuralgic pain. On inspection, the abdomen was evenly distended by a symmetrical tumor, occupying a central position and reaching close to the *appendix ensiformis*; the respiratory acts make no impression upon it. Palpation determined the presence of considerable free fluid in the peritoneal

cavity and an indistinct, uncertain kind of fluctuation in the tumor itself. There was well-marked resonance surmounting the upper half of the tumor. The mass itself was quite tender to the touch. Vaginal examination revealed the os high in the pelvis, centrally located, with a small mass behind it, seemingly continuous with it, which was supposed to be the retroverted uterus. The free abdominal fluid rendered this examination unsatisfactory. No sound was passed. No positive diagnosis was made, but the supposition favored an ovarian growth. The patient desired an early operation.

She was advised to remain quietly in bed and to take such medicines as would probably lead to removal of the ascites. These instructions were carried out, and the second and final examination was made April 11th, 1886. The patient was very much reduced in flesh and very anemic, all the mucous surfaces exceedingly bloodless. Examination showed the peritoneal fluid entirely removed—the tumor standing out freely and prominently for inspection on all sides. It still seemed to give rise to fluctuation; was palpated by several medical gentlemen, and the testimony of all was that it contained fluid. To pressure the sensation was that of elasticity. Vaginal examination now showed plainly that the uterus was incorporated with the tumor, the sound went directly into it for five inches. On the posterior surface two small tumors were now plainly felt, the largest of them was supposed to be the retroverted uterus at the first examination. The diagnosis now was a uterine tumor.

The operation for removal was done at the Presbyterian Hospital, April 13th, 1886, in the presence of Drs. Gunn, Etheridge, Graham, Adolphus, Mitchell, Ochsner, and others. An incision was made in the *linea alba* from the umbilicus to the pubes and the tumor exposed. It showed a white, glistening surface, very much like a cyst, and seemed to contain fluid—the introduction of the trocar was not followed by any flow of fluid, and during the manipulations the tumor changed to a darkish-red color. This change of color upon manipulation I have seen occur on other occasions, and its occurrence is a very sure indication of a uterine tumor. The incision was prolonged several inches above the umbilicus and the mass turned out of the cavity. After ligating and compressing the broad ligaments with forceps, they were divided, and the uterus cut through three-fourths of an inch above the cervico-vaginal junction. Paquelin's cautery was used to disinfect and destroy the cervical canal and to sear the uterine stump. It was also applied freely to the edges of the divided broad ligament on both sides. This controlled perfectly all hemorrhage except from two spurting arteries on the opposite lateral edges of the uterine stump; these were isolated and tied separately. All ligatures were of carbolized silk. A large rubber drainage tube was

carried to the bottom of Douglas' *cul-de-sac* and the extensive abdominal wound closed by eighteen sutures.

The patient was put to bed considerably collapsed, but rallied well, and as the record shows, until she left for her home, May 30th, never had a temperature of 100°. There still remains a small sinus at the site of the drainage tube, discharging about one drachm of sero-pus in twenty-four hours. One of the silk ligatures has been discharged through it. The lady has gained flesh and strength rapidly, and is free from a trouble which was rapidly robbing her of all comfort in life and hastening death.

The drainage tube did excellent service in this case, allowing the exit of large quantities of bloody serum for many days after operation. In my practice its use has always served a good purpose when large raw surfaces were left in the abdominal cavity.

In spite of the absence of rise of temperature, I have never managed an abdominal section in which the external wound did so badly. The main portion of the skin united by first intention, but a large abscess formed in the sheath of the rectus muscle, the pus from which extended from one end to the other of the wound; the nozzle of the irrigator introduced at one extremity of the wound and the carbolized water turned on, caused the pus to flow out freely from the opening at the lower end; the peritoneal edges united firmly at once and so saved trouble from this source.

It was slow in healing, several weeks, but finally united very soundly. The patient's very feeble vitality may account for the bad course taken by the wound. The wound was dressed, as I have been in the habit of doing for years, absolutely dry, with absorbent cotton and iodoform. My experience with these cases rather confirms a supposition that the frailest and weakest patients are the ones most likely to recover.

At the time of removal, the tumor weighed fourteen pounds. Even after removal many gentlemen present were convinced from its consistence that it contained a cavity holding fluid, so very deceptive was its elasticity.

DISCUSSION.

DR. J. S. KNOX said: I want to call attention, in the case reported by Dr. Etheridge, to the rapid development of myomata after the establishment of pregnancy. I have two other cases of uterine fibroid that came under my care about the same time as the patient reported by Dr. Etheridge, and who were treated similarly, and in whom also menstruation was not disturbed. They are still in perfect health, and the probabilities are that when they die it will be of some other disease; one being a widow, the other an unmarried woman. The growth of this myoma before us was slow but persistent, in spite of the use of ergot, and until the time the menses ceased and pregnancy commenced, the woman enjoyed perfect health, all unfavorable symptoms appearing within three months preceding operation. Another fact I would like to call

attention to is the danger of abortion in such cases. With the consent of Dr. Etheridge, I delayed any operative procedure until the woman had reached the full three months of pregnancy, that I might produce an abortion; I introduced the sound with great difficulty, and passed it up full four inches; it produced considerable hemorrhage, which continued for about three days. The nausea ceased immediately and the patient noticed a diminution of the size of the breasts and lost the sense of fulness of the abdomen. Her appetite returned and she took a great deal of nourishment, which improved her physical condition very much—a strange result, seeing the abortion was not accomplished. In opening the tumor after its removal, I was satisfied that, if I had produced the abortion, the woman would probably have died of sepsis or hemorrhage. There was no possible outlet for the contents of the uterus, and I think it was a fortunate thing that we did not succeed in accomplishing the abortion. Under similar circumstances I would prefer hysterectomy with its risks to abortion with its risks.

DR. E. C. DUDLEY said: Notwithstanding the general principle established by ovariectomy that the extra-peritoneal method is in itself dangerous, and that it should consequently be avoided whenever perfect intra-peritoneal hemostasis can be secured, and notwithstanding the fact that this general principle should stand for all operations involving the removal of abdominal tumors, yet the best statistics of the intra-peritoneal method in hysterectomy show a mortality of 30 or 40 per cent, while Keith and Bantock, with the clamp or *serre-neud*, have a mortality of only 10 or 15 per cent. Now, if it be true that certain dangers are inseparable from the extra-peritoneal method, it follows that part of this 10 or 15 per cent of mortality must be in consequence of it, and that the statistics might still further be improved if by some means an intra-peritoneal ligature could be applied which would give the same security against hemorrhage and permit operators to dispense with the clamp. But the dangers of the silk ligature are greater than those of the clamp because, however thoroughly applied, and however carefully the stump be stitched together, shrinkage of the stump from the escape of serum almost always occurs within a few hours, with consequent loosening of the ligatures and hemorrhage which may be fatal at once from great loss of blood, or later from septicemia. The indication clearly is for an elastic ligature, capable of following up the shrinking stump and of securing thereby permanent hemostasis. India-rubber fulfils this indication, and if properly applied is capable of becoming readily and safely encysted. The experiments of Löwenhardt and Hallswachs, together with the numerous operations of Olshausen and others, give good evidence that the India-rubber tube when dropped into the abdomen is free from danger. It is true that certain cases have been reported in which sloughing of the pedicle has followed the application of the elastic ligature with resulting abscess, but this occurs in consequence of using a ligature of any material, so large that it cannot imbed itself in the stump, and thereby permit the surface to close over it so as to secure the prompt establishment of collateral circulation to the distal portion of the stump.

Not very long ago the question was raised whether in supra-vaginal amputation it is necessary to remove the ovaries at the same time—a question to which experience has given an affirmative answer. Péan has observed a case of catamenial hemocele,

Hegar a case of extrauterine pregnancy, and Kaltenbach a case of distressing menses recurring monthly in consequence of leaving the ovaries after hysterectomy; therefore, unless the patient has passed the menopause, they should, if possible, be removed on principle.

DR. H. T. BYFORD said: I would like to ask whether such ligatures as Dr. Dudley speaks of could be prepared beforehand? (Dr. Dudley: You might prepare three hundred of different lengths and select the one you want.) With such a quantity of fresh ones on hand, one could undoubtedly find one to use. Schroeder's later percentages are, I believe, a little more favorable than Dr. Dudley seems to think, and enable him to claim, with some degree of reason, that his intra-peritoneal method is the best.

THE PRESIDENT said: One word in relation to the remarks of Dr. Dudley concerning ligature: The shoemaker's stitch, using the silk ligature, was introduced in 1881 by Dr. Marcy, of Boston. I am not informed how many times it has been used. It comes nearer obviating the difficulties of the silk ligature, I think, than any other plan in use. His method is sewing the cervix with the shoemaker's stitch. One end of the silk ligature is carried through by a strong needle threaded at the point and mounted in a handle. This is then unthreaded and the other end threaded, bringing this through as the needle is withdrawn. In this way both ends of the suture lie in the same opening in the tissue, though running in opposite directions. Other stitches, as many as may be needed, and as near together as is deemed necessary, are inserted in the same way.

This is a continuous suture, and consequently more elastic than the ordinary suture, and there is but one knot at the termination of the suture, and if there seems to be danger from hemorrhage, a second row of sutures may be put in at right angles to the first. In the cases I have known with this suture, there has been no difficulty from hemorrhage or sepsis. The tumors were not large, and perhaps that explains the success of the method. I have never had an opportunity of trying it. It seems to me very desirable to use silk if we can to stop the hemorrhage or oozing from the vessels. I don't exactly know Schroeder's plan of using the double row of stitches, whether it is substantially this method or not. One thing further which Dr. Merriman has touched upon and which we should all profit by, viz.: that when there is evidence of sepsis, slight or considerable, we should open the abdominal wound. In all the autopsies after these operations, where sepsis has been the cause of death, I believe they could have been saved if the wound had been opened and properly treated three or four days before the death of the patient.

DR. H. P. MERRIMAN said: I was so fortunate as to be present at Dr. Etheridge's operation. One point that he did not mention is that after the removal of the tumor and after the use of the ligatures, which he applied to each artery by itself, and not in one mass around the pedicle, the pelvis was entirely dry, so much so that when the question of a drainage tube came up, I believe every one present said they could see no reason for its use. There was no exudation. The sponge came out hardly colored after it was placed in contact with the surface that had been denuded, and there was apparently no need of drainage, yet afterward we had oozing from this surface and the formation of bloody serum in the cavity, with

septicemia as a result. I was present at the autopsy and am convinced that had a drainage tube been used this patient would have recovered. I don't know but that if, after eight or nine days, when the symptoms began to show septicemia, there had been an opening of the cavity, the septic material might have been removed and the case have had a fortunate termination. The danger seems to me to come from septicemia rather than from any direct loss of blood there may be from hemorrhage, although I can see that there might be, even with the drainage tube, sufficient exudation of the parts to exhaust the patient and produce a fatal termination. There was one thing that struck me with considerable interest, and I don't know what bearing it may have. She had taken ergot uninterruptedly for a year, with a general improvement of her health; after this use of the ergot she became pregnant for the first time in her eight years of married life. Was it a coincidence or was there some relation between the use of ergot and pregnancy?

DR. C. T. PARKES said: I am very much interested in this discussion, as it has brought up the question of how to treat the pedicle. Out of five hysterectomies that I have done, four by the intra-peritoneal and one by the extra-peritoneal method, the one that was treated by the elastic ligature died quicker than any of the rest. I am not favorably impressed with it, and think it is an unsafe ligature to use because it never ceases acting; it succeeds in stopping bleeding, but is apt to stop all circulation, and in quite a number of these cases the portion beyond the ligature sloughs, and you have a sloughing wound, and may have the slough lodging in the peritoneal cavity. In the case just referred to, the stump of the uterus sloughed, and was a stinking, decomposing mass on post-mortem examination. Another objection I have to this ligature is that it can be applied only to the uterus, the stump itself. There are many cases where, from one circumstance or another, you are led to operate, and in which the tumor does not always have a pedicle that can be embraced by any ligature. The plan that I have used for a number of years in employing the elastic ligature for other purposes is, to draw it taut, and tie the ends together with silk. By fastening the ligature while tightly drawn, you can cut the ends fairly short, and have no knot at all. The plan I adopted in the operation reported to-night was a combination of the silk ligature and the cautery. I believe it to be the best method. I was very much impressed on reading Dr. Keith's recent work on uterine tumors by an expression in reference to the treatment of the pedicle. He now treats it almost entirely by the extraperitoneal method, but thinks the intraperitoneal will be the coming method, the pedicle being secured by some application of the cautery to the divided surfaces. This is the best method for controlling hemorrhages. Often there will be certain spots where arteries of some size come up through the tissue, and perhaps an isolated ligature will have to be applied to them. I don't believe that any wound in the peritoneal cavity that is at all extensive in character should be left without drainage. I have been satisfied, in the cases that have come under my observation, that one of the main causes of death has been from the neglect of this precaution. When I have divided a large surface, whether I have a dry cavity or not, if that surface is free in the peritoneal cavity, I shall use drainage. I do not think that it is possible to make any comparison between laparotomies for uterine tumors and ovarian tumors. There never will be the same

conditions, and the proportion of recoveries will never be the same. Dr. Keith does not pretend to say that one out of fifty of the cases that come to him are subjected to operation. I believe the proper method of controlling hemorrhage and treating the stump in uterine tumors is by the combination of the silk ligature and searing the stump. The heat of the cautery I use is always a dark-red. I have always adopted the plan of putting on to the stump that is to be seared the compress forceps or clamp, leaving a quarter of an inch of the tissue above it, and burning that down close to the forceps until it is perfectly smooth. I have always drained through the external wound; normally the external cavity is closed, and abhors any abnormal effusion; the elasticity of the walls and viscera presses it out if an opening be present.

Dr. Bartlet asked with reference to a case of double ovariectomy: At the time of the operation, it was noticed that, notwithstanding active purgatives had been used previously, the descending colon was full of hardened feces; she subsequently developed obstruction of the bowel, and it was impossible to get any motion at all. I examined the rectum high up, found a tight stricture, and got the bowels emptied after this was forcibly dilated.

Annual Meeting, Friday, October 22d, 1886.

The President, DANIEL T. NELSON, M.D., in the Chair.

ELECTION OF OFFICERS.

The following officers were elected for the year 1886-87:

President—Charles Warrington Earle.

First Vice-President—E. C. Dudley.

Second Vice-President—T. D. Fitch.

Secretary and Treasurer—Edward Warren Sawyer.

Editor—W. W. Jaggard.

ADDRESS OF THE RETIRING PRESIDENT, DANIEL T. NELSON, M.D.

Honored Fellows:—Another year of the history of our Society has completed its cycle, and it is well for us to briefly review its history, and, profiting by the past experience, arrange more comprehensive plans for its future usefulness.

Among the Jews, the physician is frequently consulted before matrimonial alliances are contracted. Other denominations would do well to adopt this salutary custom, for, if rightly carried out, it would prevent much disease and suffering among the contracting parties and their offspring.

While hereditary diseases may not be entirely prevented in children, yet, if carefully watched and properly treated, the tendency may be largely overcome, especially if the children are so closely watched that the beginnings of disease are noticed, for there are few diseases which are not curable if taken in their incipency. And in the present state of our knowledge, are there not few diseases whose cause is really unknown, and therefore not preventable?

The causes of disease in woman may be conveniently arranged,

as regards time, under the heads: 1. The diseases of puberty; 2. of menstrual life; and 3. of senility. The foundation for not a few of the pelvic disorders is laid during puberty, which is not to be considered simply the date at which the menses first appear, but rather the whole period required for the development of the sexual organs, the completion of which process is marked by the appearance of the menstrual discharge. No one who is familiar with the diseases of women will doubt that a large percentage of these diseases, beginning at puberty or soon after, are continued with a varied history during the life of the patient, being increased or decreased according to the patient's good fortune, or, perchance, from treatment.

It seems to me that Dr. Nathan Allen, of Lowell, Mass., has very tersely enunciated the correct basis upon which rest the "Laws of Health and Longevity," and the "Laws of Population and Human Increase," namely, upon a normal anatomy and physiology—"a perfect development of all the organs of the body, so that there shall be a perfect harmony in the performance of all their respective functions." No one of our organs is unimportant: not one can be left out or weakened in its functional activity without the whole body suffering loss, and no one can be perfect without perfection in all the rest.

There is, I know, a law of compensation, whereby if one organ or system of organs is disabled or overworked, another will try to aid it to do its work, as the skin and alimentary canal when the kidneys are disabled, or the fingers and the ears when the eyes are useless; but these are conditions of disease, not health; of pathology, not physiology.

Tried by this law, then, what are the conditions necessary for the normal development of reproductive organs? Plainly the normal development and activity of all of the other organs and systems of organs, and conversely, the other systems of organs can only attain their highest functional activity when the sexual organs are perfectly developed. During the period of puberty, then, from ten to eighteen years, or more commonly from twelve to sixteen, do we ordinarily find the girls in our families possessed of an alimentary, glandular, and vascular system sufficiently developed and so normally active that a healthy blood, containing in quantity and quality just the pabulum needed, is carried to each tissue? During these years of puberty which we are considering, the teeth begin to break down, in not a few instances, and as the result, digestion is impaired.

But why do the teeth so often decay in girls at puberty and during early married life? Why is it, for example, that the German, Swede, and Norwegian girls, who come to this country with model teeth, and are the picture of health, unless we except the light complexion of the Scandinavians as hardly compatible with the most robust health—why is it that these girls live in our fami-

lies but a few years before their teeth begin to decay, and they lose the fresh bloom of health which they brought from their native land? And then, if they marry and bear two or three children, they are almost a wreck; their teeth are so decayed as to be of no use for mastication. They are poor and feeble, pale and anemic, old and haggard, but the shadows of their former selves; in the best possible condition to receive and develop almost any form of disease, tuberculosis, and the like. Why this change? It is not simply the change in their habits of life and the climate, though these have doubtless had their influence; but I believe a far more important cause will be found in the quality of their food. The quantity of the food they consume is probably greater than what they would get in the old country; but is the quality as appropriate for the nourishment and development of *all* the tissues? I believe not. For while the carbonaceous and albuminous foods are eaten in greater quantity, the *inorganic* is deficient, and here is an important source of weakness and decay, as I believe. The inorganic portion of the wheat is largely removed in the process of grinding, leaving only the starch and some of the gluten in the white flour which is eaten: while the brown bread from the coarser flour and from rye, which was formerly used largely in this country, and is still in most foreign countries, contained far more of the inorganic substances necessary for the development and nutrition of the bones, the teeth, and other important tissues, and, as the result, the teeth erupted earlier, were better formed, and did not decay as readily, the bones were better developed, and all the tissues firmer.

During pregnancy, if the inorganic foods are not furnished the mother in sufficient quantity, the fetus will even take it from the bones, and especially the teeth, of the mother, for all the tissues, the softest as well as the hardest, must have inorganic food, and while these resources of the mother are freely drawn upon, the deficiency may be so great that both the mother and child suffer for the want of them. But it is the rule that the mother will suffer first from the deficiency, her stomach will be disturbed, indigestion, heart-burn, and the like, and her teeth will decay and break away before the tissues of the fetus will seem to suffer. But these symptoms may usually be readily relieved by giving the mother a sufficient quantity of the lime and magnesia salts—in other words, furnishing her with sufficient quantity of inorganic food.

And the developing tissues of infancy and childhood need more food of all kinds, the inorganic included, than the simply working tissues of adult life. So, during puberty, the girl needs more of this food for the proper development of the reproductive organs, a whole system of organs developing within a few years. To insure, then, a normal development of the sexual organs at puberty, there must be a sufficient supply of *all* kinds of food, and not the least, the inorganic.

Among our American girls, there is another important cause of imperfect development, and consequently abnormal functional activity of the generative organs, in the *style of dress* now so nearly universal, consisting essentially of the tight-fitting *corset*, with equally tight outer clothing—for even if the corsets may seem to be loose when first applied, and they are never acknowledged to be tight by the wearer—yet it must and does prevent the expansion and development of the lungs, and the muscles of the back and abdomen. It displaces the liver and stomach upwards, and presses the abdominal viscera downward upon the pelvis, compressing these organs during the important period of their development, and laying the foundation for the congestions, the pelvic inflammations, the flexions, the displacements and perhaps even the ovarian and fibroid tumors of later years. Among girls of foreign birth the corset is not generally put on until the changes of puberty are complete, consequently its evil effects are not seen as early, usually not until several years of menstrual life, or even after marriage. But our American girls are not *dressed* without the corset, even *before* puberty, so they have its evil effects during puberty, during menstrual life, and generally during the rest of their lives.

Not only does the corset prevent the development of and displace the important organs of the thorax, abdomen, and pelvis, but it either alone, or with ingeniously contrived additions, is made to compress and prevent the development of the mammary glands, while it seems to enlarge them.

Dr. DeWolf tells us that statistics show that half of all the deaths are children under five years of age, and that while forty per cent of all the babies born in the United States die in infancy, only eighteen per cent die during the same period in Norway.

The chief reason for this frightful difference in the mortality is doubtless due to the fact that so many more mothers can nurse their children in Norway than in the United States, for I will not believe that there are many mothers in any country *who will not* nurse their children when they can. Corroborating and explaining these statistics is the statement that 10,000,000 of nursing bottles were made in this country during the past year. How many were exported, and how many more were imported is not stated. Neither are we told how many *tons* of infant foods were manufactured in the United States, and imported during the same period. Surely, all must acknowledge that very many of our American mothers cannot nurse their children, or only for a very short period, and that this is one of the important causes producing this frightful mortality among our children. Have we explained in part the reason for this? If so, the remedy is evident.

But so long as the corset is in favor, the gynecologist and the undertaker will thrive, and the wet-nurse will be in demand.

But other systems are needed to complete the harmony neces-

sary to the perfect development of the reproductive organs at puberty, beside the alimentary, the vascular, and the glandular. The muscular and the nervous systems have most important functions to perform. Physiologists estimate that the voluntary muscles normally require from one-third to one-quarter of all the blood for their nutritive and functional activity, and *vice versa*, healthy and active muscles are required for a normal blood, which shall be rich in the pabulum needed for the developing tissues. And here our American girls usually fail as puberty approaches, their muscular exercise is restricted, and they are confined within doors and their time given to music, drawing, painting, and receiving friends, instead of the more active pursuits which would continue the development of the muscular system, while it aided alimentation: or perhaps what is worse, their time is devoted largely to study, thus calling into undue activity the nervous centres, and so developing the whole nervous system that this is ever afterward the dominant system.

The recent innovation of the manual training school for boys is in the right direction for them, that their muscles may be developed and trained while their minds are being educated. And is there not an even greater need for similar schools for girls, that their muscles may be developed to correspond with the other organs? As, during pregnancy, the developing fetus excites to activity all the other organs and systems of organs, and they in turn furnish the material needed for its further growth, so at puberty the growing sexual organs furnish a new stimulus to activity for all the tissues, and they in turn will exert an influence for good or ill upon these developing organs.

Dr. J. M. Toner, of Washington, D. C., who has compiled some valuable tables showing the birth and death rate in different States and of different periods of time, says: "With a desire to view this question of birth-rate from a standpoint that would be sufficiently comprehensive, and yet free from even the appearance of preconceived notions or sectional partiality, I have made something of a study of what the records of the U. S. census of 1870 teach upon the subject of population, in its enumeration by ages; also of the births, deaths, etc. From this source I find undoubted evidence of a gradual decline in the population of children under 15 to the number of women between 15 and 50 years of age in our country. I do not propose to adopt any theory or to explain this extraordinary condition. But it is proper that the profession and the country should be made acquainted with the facts, and made to realize that the American people in this particular are showing unmistakable signs of physical degeneracy.

"I have," he says, "embodied facts only, and leave the enlightened understanding of the American people to assign the reasons, from the evidence everywhere around them, and to supply the remedy."

Do not the statements we have made point to some, at least, of the causes of this degeneracy? 1st. In the food not being appropriate for normal development. 2d. In a style of dress which hinders the development of several systems of organs; and 3d. In such habits of life that some systems of organs are developed out of proportion to the rest.

Says the Hon. Francis A. Walker, after comparing the increase in population during the decades 1840-50, and 1850-60, with the increase from 1860-70, the increase should have been three to four millions more. The lack of increase is in part accounted for by the loss of increase of about half a million of colored people, on account of the change in their liberation from slavery, and also by the loss of about a million persons in the Union and Confederate armies, whose deaths were occasioned by the war; and the calling from their homes, during four years of the war, of more than a million men must have had a great effect upon the increase of population.

But he says further, that "another cause may be alluded to, namely, the notorious growth of habits of life in many sections of the country, which tend strongly to reduce the rate of national increase, and which, if persisted in, will make the showing of another census hardly so satisfactory as the present, even without a devastating war to account for the loss of hundreds of thousands in hospitals or on the battle field.

"No one can be familiar with life in the Eastern and Middle States generally, and in the Western cities, and not be aware that children are not born to American parents as they were in the early days of the country. Luxury, fashion, and the vice of 'boarding' combine to limit the increase of families, to a degree that in some sections has threatened the perpetuity of our native stock. This tendency is not one that needs be brought out by statistical comparison. It is patent, palpable, and needs no proof."

Of the many causes of disease acting during menstrual and married life, we will take the time to briefly discuss but one, namely, the effects of the gonorrheal poison in the female. As long ago as 1872, Dr. Noeggerath, of New York, called the attention of the profession to the importance of this poison in producing a variety of pelvic inflammations, and in 1876, in a paper before the American Gynecological Society, showed the effects of this virus in producing sterility in both the male and female. After these years of experience, many of the profession have learned to appreciate the importance of his observations, but I fear many still do not look for this as an exciting cause in the pelvic inflammations.

The symptoms of the disease have been so well described by Dr. Noeggerath that we need not now take the time to enumerate them—simply recollecting that an attack of gonorrhea in the male

may produce a slight stricture in some portion of the urethra, or may even affect the seminal vesicles and vasa deferentia, and in these positions remain latent for years, giving the individual no symptoms of its existence and making it difficult for the physician, even, to demonstrate its presence. But intercourse with a previously healthy wife implants the disease in her, and it lights up a series of inflammations which are always tedious and difficult to cure, and may become chronic, lasting through the whole of her menstrual life, and perhaps of her natural life, unless, fortunately, her life be shortened by this inflammation, aggravated by what would otherwise be slight causes.

Beginning as a slight or more severe attack of vaginitis and cervicitis, with likely a moderate attack of urethritis, it may readily be mistaken for the result of coitus in organs not accustomed to this function, or excessively used. But instead of subsiding from simple treatment, or none, as such a form of inflammation should, it extends along the mucous membrane of the whole genital canal, affecting the mucous membrane of the uterus, and even extending to the deeper structures, producing a true metritis; and after a time entering the Fallopian tubes and exciting a salpingitis. And from the peculiar anatomy of these organs—the abdominal end being larger than the uterine—the products of inflammation are readily thrown upon the ovary and into the peritoneal cavity, especially when the uterine extremity is abnormally contracted, as it usually is from the swelling of the tissues. Whence there results a perimetritis which is usually of high grade in its acute stage, and very tedious in the chronic. And in the chronic stage it is very readily re-excited into an acute condition by what would otherwise be slight causes—a cold, a fall, even skilful manipulation with a sound or other instrument, operations not in themselves dangerous, like those upon the cervix or perineum. And resulting from these inflammations, the woman is very likely to be sterile, or if she becomes pregnant, to miscarry. And after she has been delivered, either at full term or prematurely, she is in greater danger of puerperal fever from the chronic inflammation already existing in the pelvis.

The gonorrheal poison, then, in the female, produces a form of inflammation which readily passes into the chronic stage, and is with difficulty treated in either stage.

And how are these consequences to be avoided? Clearly, best by avoiding the original disease. And if these statements are substantially correct, and we believe they are, gonorrhea is not the simple and temporary disease which it is often considered by both patient and physician—"a cold," "a slight acute disease" easily cured by simple treatment, and completely eradicated. But rather a disease which often continues during the greater part of the life, in the male, is readily transmitted to the wife, in her

is, with even more difficulty, satisfactorily treated, and which frequently renders both husband and wife sterile.

As prevention is always the best cure, can there not be some way devised for preventing the spread of the venereal diseases? Should not competent physicians be employed to instruct the pupils in our public schools, of suitable age, the proper use and abuse of the reproductive organs, including the evils resulting from self-abuse, and the venereal diseases? Can we not, as physicians, aid in making vice as degrading and culpable in the *male* as in the *female*? And as gynecologists, hasten the time when our American women shall be the *healthiest*, and so the *happiest* and the *handsomest* of any land, as they are now the *brightest* and the *best*!

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of October 21st, 1886.

J. L. CLEVELAND, M.D., *President, in the Chair.*

DR. C. O. WRIGHT reported the following

CASES OF VICARIOUS MENSTRUATION.

In the presentation of the following cases, I have not attempted any elaboration whatever, but simply present them as they are, trusting to the discussion to help me in the formulation of the opinions of the members, as to their respective merits.

Mrs. B., aged 37 years, medium blonde, came into my hands some six years ago. She is moderately well developed, and enjoyed perfect health until one year after marriage. She then had a very severe attack of vaginitis, which in spite of all treatment has continued in a greater or less degree up to the present time. Since the introduction of cocaine, I have been enabled to make more satisfactory examination of the parts and have been surprised at the small size of the uterus, it being almost in a condition of atrophy. She states that, up to the first attack of vaginitis, her menses had been perfectly normal, since which time she had never had a "show" per vaginam, but at a regular period per os.

Mrs. R., the second case, also a blonde, was three and a half months pregnant with her third child, when I was called to see her. She stated that while carrying her other children she menstruated up to the third month, not knowing she was pregnant until further developments convinced her.

In this case, anticipating her menses, she was worried when she found they did not come down, but passed as expectorated

material. This occurred during the three months when she returned to the city, having been during this time in southern Arkansas. Her general condition was good, and she had no further difficulty. This was two years ago, and her menses have been perfectly normal since.

Third case. Mrs. B., a pronounced blonde, aged 31 years, of delicate health, sent for me one month ago. Found her suffering most acutely with her head and back, and some degree of fever. Upon interrogating her, found that the day before she had a slight "show," but only a few spots instead of her usual free flow, and that she was expectorating the same quite freely; she having two years previously had a similar attack. I gave her twenty grains of the bromide of potassa, and a drachm of the tinct. of hydro-piperoides every three hours, and after taking a few doses, there was a return to the normal condition.

I have briefly called attention to the one or two points in the narration of the above cases, without giving a full and succinct history of each case.

It will be observed that each of these cases was a blonde, and I find that in five cases I have had under observation, four of them were of this type. Is there anything peculiar in their conformation that leads to this result, or has it been simply my observation? I should like to hear from the members upon that point.

In the first case, what relation, if any, had the vaginitis to the vicarious condition? Reasoning from cause and effect, what was at the base of this case? For I am free to confess I have not been able to trace it up.

The second case seems to me more easily explainable. It is not unusual for menstruation to occur up to the third month, and the discharge to take place through the easiest channel. In this case, ovulation continuing, the decidua preventing its flow, it took its course upward and escaped by the mucous membrane of the mouth. So with the third case, menstruation being compared somewhat to a condition of gestation, the flow had to escape by the easiest channel, took the course by the mouth; though why this should be I am not able to explain.

There are many in the profession who are unwilling to admit there is anything like vicarious menstruation, notably among the number Dr. Wilkes, but how he can explain the above cases upon any other hypothesis is to me a mystery. Drs. Barnes and Wiltshire, each in an elaborate article, take the ground that there is such a condition, and quote a large number of authorities and cases in support of this view. We know that at the time of menstruation there is general vascular disturbance, increased arterial tension as well as nervous tension, and the blood flows from the weakest spot, and there is no good reason in these cases to call them anything but vicarious menstruation.

DR. PALMER said he had seen a number of cases of vicarious

menstruation, the vicarious discharge of blood having occurred from the rectum, stomach, nose, or lungs. In the most pronounced cases, the hemorrhage took place from the lungs. In none did it continue for any great length of time, and in no instance were the symptoms so characteristic as the first one related by Dr. Wright.

The speaker said he did not doubt the existence of a true vicarious menstruation, and the explanation offered by a study of the phenomena of menstruation seemed to him satisfactory. These phenomena are by no means local only, but they are as well general in their manifestations. The simple discharge of blood from the uterus for four to five days, at stated intervals, is not the sum total of this function: but the menstrual function in its cycle is continuous. For some number of days preceding the menstrual flux, the vascular fulness and tension rises, the bodily weight slightly increases, and the temperature can be noticed to increase. The nervous tension also is heightened. The maximum is reached by the commencement of the flux, after which the tension lowers, the body loses some weight, the temperature declines. If from any cause the uterus—the organ for the local expression of menstruation—is absent, ill-developed, atrophied, or dormant, ovulation going on, the system at large may obtain relief from the vascular and nervous tension by a discharge of blood from some other quarter than the uterus. Exactly what quarter will depend upon the local conditions elsewhere. It would appear that parts or organs, the seat of the lesser resistance, will be the chosen place.

Dr. Wright refers to a point which may be significant. His cases were all among blondes. The speaker could not so distinctly recall his experience in this particular but theoretically it would seem that vicarious menstruation would be more frequent in blondes than brunettes; their vascular system is weaker. With them a slight injury of the surface is more prone to leave ecchymoses.

The very beginning of menstruation is precipitated and excited by ovulation. If there has been no ovarian stimulus, there would not be any menstrual flux. The menstrual functions, once established, may continue without ovulation, at least for a while. Each menstrual act, while usually, probably, preceded or accompanied by a corresponding act of ovulation, is not necessarily so. If the ovaries are thoroughly extirpated, true menstruation stops at once or in the near future, but the menstrual molimen may continue with the removal of the ovaries. It is then not improbable that an underlying sexual force resides in the nervous system, which, presiding over these functions, explains the general phenomena of the menstrual cycle.

DR. GUSTAVE ZINKE said he could easily understand the philosophy of vicarious menstruation in an instance where a woman has regularly menstruated for a number of years. This function of the uterus, from some cause or other, suddenly ceases, and the discharge, which should take place through it, seeks another outlet. To illustrate: When the uterus becomes pregnant, menstruation as a rule ceases; probably because the endometrium remains in contact with the corporeal cavity and participates in the growth of the organ as well as in the development of the ovum. Again we know that the menses may continue, for a time, even in pregnancy and, notwithstanding the changed condition of the uterus, may find its outlet through the womb. This to his mind proved

conclusively that the stimulus of menstruation is not always dormant during gestation. Should the stimulus be very marked, but unable to create from the uterine cavity an avenue for the blood to escape, the mucous membrane of any cavity that affords the least resistance at the time may become the site of a hemorrhage. This is at least plausible. The same view will hold good in a woman who has an ill-developed uterus; the stimulant exists, the womb does not respond, however, and a loss of blood may occur in another part of the body.

The "habit theory" is not at all unreasonable; indeed, it seemed to him a very rational explanation. He would call attention to those cases in which persons had been bled, annually or semi-annually, for several years; they would feel the necessity for venesection every succeeding year or period and if this practice was abandoned or could no longer be resorted to for want of proper person, the individuals would become sick at the wonted time and seek relief in being bled again. He knew persons who had been regularly bled in the old country and, on arriving here, would anxiously look about for somebody to bleed them when the time for it had arrived. In the same manner, in a woman who has menstruated regularly year after year, why should there not be an endeavor on the part of the system to relieve itself in some other way, when the natural point of exit is obstructed or unable to respond to the call? It is, however, difficult to understand why women who have menstruated naturally, and who are not pregnant nor the victims of disease, indeed, in perfect health, should occasionally be subject to vicarious menstruation.

DR. GILES S. MITCHELL said, when a periodical discharge of blood takes place from some other organ or tissue than that of the uterine mucous membrane, we call it vicarious or ectopic menstruation. The regularity of its recurrence in connection with the menstrual period is evidence of increased vascular tension at that time. Normal menstruation implies normal uterus and normal ovaries. First menstruation depends upon ovulation. Menstruation may continue for an indefinite time after removal of the ovaries from force of habit. The abundant vascular supply to the Schneiderian membrane affords a satisfactory explanation why epistaxis is the most frequent form of vicarious menstruation. Hematemesis and hemoptysis are next in frequency. Hemorrhages often occur from the intestinal mucous membrane. This form of vicarious menstruation usually occurs in women of full habit and who suffer from internal hemorrhoids. Vicarious menstruation is not limited to periodical discharges of blood from mucous surfaces.

We sometimes have hemorrhage by diapedesis from the skin. In such cases the individual virtually sweats blood, there being no solution of continuity of the vessel-walls.

Speaker believed, in all cases of vicarious menstruation, there was more or less uterine atrophy. Atrophy, like all other degenerative changes, implies obliteration of vessels.

The majority of the cases reported by the essayist were blondes. We have, as a satisfactory reason for this, the well-known fact that the vascular system of blondes is weaker than in brunettes.

Vicarious menstruation, in the speaker's experience, was of short duration. He remembered no case occurring in his own practice that continued longer than ten months. Young, delicate girls are most liable to it. The loss of blood is sometimes excessive, but it

seldom proves dangerous to life. Treatment consists in endeavoring to re-establish the flow of blood in the proper channel. In plethoric subjects, saline cathartics are indicated. In delicate girls, preparations containing iron, quinine, and strychnine will be found serviceable. Brilliant results often follow local applications of electricity.

DR. GEORGE E. JONES remarked that this question had been the subject of speculation in years gone by, and lately again by a paper by Dr. Barnes, read before the British Gynecological Society, which paper was strongly opposed by Dr. Wilks and others.

There are certain cases in which there is a periodical discharge from various organs during the time proper for the normal menstrual flow, whether the character of the discharge is blood or that of other secretion.

A young lady, who, at the age of 18, on a return from horseback exercise, sat by an open window, became thoroughly chilled, and never saw a true menstrual flow up to the present time: she is now 23, and married. Instead of the true menstrual flow, she has a copious discharge of milky secretion from both breasts, lasting about thirty-six hours; this discharge returning regularly every twenty-eight or twenty-nine days. She is *apparently* in good health.

A married lady, who never had children, has an excessive diarrhea, followed by a leucorrhea, then at the end of four days a slight show of blood.

During the past year he saw a young girl who had become suddenly chilled by imprudent exposure to stormy weather, after which the menses stopped, and in their place, for a few months, she had hematemeses, which ceased on the restoration of the normal flow.

A professional friend in Indiana related to the speaker the case of a young lady who has an excessive leucorrhea regularly every month during the proper time for the normal menstrual flow.

Two of the cases above mentioned were brunettes, the other a blonde.

DR. W. H. WENNING remarked that he was somewhat surprised at the readiness with which nearly all of the speakers had sought to explain satisfactorily—to their own minds, at least—the singular phenomena of vicarious menstruation, which, to the speaker, had always been a matter difficult of explanation. Most of the popular text-books on gynecology either do not mention vicarious menstruation at all, or dismiss the subject with few words, affording but a very unsatisfactory explanation for its occurrence.

Two questions present themselves right at the outset. 1. Does vicarious menstruation really occur? 2. If so, what is its explanation? Some surprise might be expressed at the first question, when the report of the cases this evening ought to settle this point beyond a doubt, as well as the almost universal acceptance of the term by older authorities.

It was just this latter fact, however, the simple mention of the possibility of the occurrence of vicarious menstruation, without a satisfactory explanation of this curious and certainly interesting phenomenon, that of late gave rise to the expression of some skepticism on this point. There can be no doubt that, if most of the cases so readily accepted as "vicarious menstruation" were closely examined, other pathological conditions could be found to account for this periodical loss of blood. The fact that hemoptysis is regarded

as a common substitute for the proper menstrual function already gives rise to the suspicion that, in most of these cases, there is a phthisical tendency, and the hemorrhage from the lungs is simply a symptom of a disease of which arrest of the menses is also an early symptom. In other words, a phthisical patient with amenorrhea has spitting of blood, not in consequence of the arrest of menstruation, but on account of pathological changes in the lungs. So, also, cases of hematemesis may be due to organic disease of the stomach, giving rise to vomiting of blood, whilst amenorrhea in this affection, as well as in disease of the lungs, may be due to the general breaking down of the whole system.

A true, *physiological* substitute for the menstrual function, from other organs outside of the generative, the speaker considered exceedingly rare. Even if it be granted that this vicarious discharge could occur, it is improper to call it *menstruation*, because certainly the composition of the blood is not the same as that of menstrual discharge; if there is any connection with menstruation at all, it ought to be styled a vicarious *hemorrhage*—a hemorrhage occurring vicariously of menstruation. But how is this hemorrhage, occurring at regular intervals in an otherwise healthy subject, to be explained? If the vascular tension preceding menstruation seeks an outlet in another channel when there is some obstruction for its natural outlet, certainly we would have to meet this vicarious hemorrhage much more frequently. Every one has seen cases of amenorrhea in subjects in whom the vascular tension occurring at the normal period of menstruation was quite marked and yet no vicarious hemorrhage took place, although all conditions were favorable for its occurrence. Of course, where arrest of the menses was due to anemia or other debilitating causes, no one would expect a vicarious discharge, but it is also absent in plethoric individuals in whom the menses are but temporarily arrested, and the necessity for the relief of this vascular tension in some other direction seems imperative. And then again, why does it not occur after extirpation of the womb where the ovaries have been left behind? Menstruation is said to be stimulated by ovulation, even if it is not granted that the former is an actual expression of the latter. The womb being removed, however, menstruation ought certainly to seek an outlet in some other direction upon the stimulation of the ovaries.

One of the speakers mentioned the theory of "habit" in menstruation, which might account for vicarious menstruation where the flow from the womb is arrested either from want of development or disease. In illustration, he cited those cases where persons had been bled regularly, and experienced the need of venesection at the recurrence of the wonted period. The speaker would reply that this need is more imaginary than real; he, too, had seen such cases, but any temporary congestion, aye, even constipation, would lead them to think that the period for venesection had come, until the administration of a simple cathartic would relieve these symptoms.

The speaker was, therefore, of the opinion that so long as we had no satisfactory explanation for menstruation itself, we could not give a rational explanation for the vicarious forms. "Vascular tension" and "nervous tension" might explain, and really are the cause of congestion; but they do not explain menstruation, that is, the regular, periodical recurrence of a discharge from the womb resembling blood. Hence the regular and also

periodical hemorrhage occurring from other organs in place of normal menstruation does not yet admit of satisfactory explanation.

DR. PALMER, in reply to the Secretary that all the explanations given do not yet satisfactorily account for vicarious menstruation, referred again to the phenomena of vascular tension, its gradual on-coming, and its subsidence by the establishment of the menstrual flux. Does it not look rational that, if the uterus for some cause cannot relieve this tension, may not some other organ or tissue?

Clinical evidence may be further offered in the frequency of congestive headaches towards the cessation of menstruation at the menopause. Months and years are not infrequently passed before the system becomes accommodated to this physiological change.

Some of the speakers had spoken of the continuance of menstruation after ovarian extirpation, and had offered the explanation of the law of habit. There is, doubtless, much in this force of habit long-continued, and the law of periodicity. But more potent reasons could be assigned. In not a few of these cases of oöphorectomy, the total extirpation of both ovaries has been seeming and not real. Some ovarian stroma has been left behind. The stroma may have been distributed irregularly within the structures of the broad ligaments and not limited to the ovaries only. A third ovary may have been present; and finally, in some cases, the discharge of blood has been a metrostaxis and not a true menstruation. True menstruation stops in the vast majority of cases where all ovarian stroma is removed. The making of a *Tait's* operation doubtless more surely secured this result than a *Batley's*, because the ligature in the former operation by necessity must be placed deeper to facilitate the removal of the Fallopian tubes—a fact which has made Lawson Tait believe that the removal of the Fallopian tubes is necessary to stop menstruation—a belief which, in the speaker's judgment, is not substantiated by the facts.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, November 3d, 1886.

J. B. POTTER, M.D., *President, in the Chair.*

Specimens—The following specimens were shown:

1. Dr. Horrocks. *A section from cancer of cervix uteri, showing epithelioma passing into medullary carcinoma.*
2. Dr. Gervis exhibited some drawings from microscopical sections of the surface of a fibroid polypus, which showed that the epithelium is ciliated in positions where there is neither friction nor pressure.

PAPILLOMA OF THE FALLOPIAN TUBE AND THE RELATION OF HYDRO-PERITONEUM TO TUBAL DISEASE.¹

By MR. ALBAN DORAN.—The discussion of this paper was opened by DR. ROUTH, who said that in a former paper Mr. Doran showed how disease of the Fallopian tube could be produced by extension of inflammation from the vagina (gonorrhœa), leading to endometritis, pyo-salpingitis, peritonitis, and death. He now had shown that the Fallopian tube was liable to be affected with papillomata, a very painful disease. Dr. Routh thought that a similar propagation upwards could produce these papillomata, as the vulva, vagina, and neck of the uterus were liable to be studded with warts and cauliflower excrescences, and polypi were found in the uterus, all of which, when examined microscopically, were similar.

Now, from what source did these warts originally arise? In large quantity they existed either in married women or women who had had sexual intercourse, they were eminently contagious, and might possibly be caught as ordinary warts were. The contact of a warty secretion could produce a wart—possibly they were sometimes sequelæ of venereal disease, like condylomata, etc.; and means which were found to cure syphilis often cured these warts completely. It would seem that according to the seat of these papillomata, the secretion from them varied. In the vagina, they gave rise to a very fetid secretion, in the uterus to a sanguineous one, in the tubes to a very acrid or but slightly irritating secretion—fortunately in the former case the violent inflammation produced closed the fimbriated extremity, and so prevented extension of the inflammation to the peritoneum—in the latter case, the secretion resembled a mild catarrhal fluid, the irritation was insufficient to cause closure of the tube, and hydro-peritoneum, or more properly, sero-peritoneum resulted. It seemed highly probable that papillomata of the fimbria might give rise to papillomata of the peritoneum and ovaries. It has been affirmed that, after operation, papillomata of the peritoneum sometimes disappeared, while at other times they assumed a malignant type.

Surely the explanation was that, in the former examples, there was no cancerous diathesis, while in the latter there was, and exactly as a blow or irritation may cause cancer in a person with cancerous diathesis, so benignant papillomata may become malignant.

The conclusion to be drawn from these general principles was to enforce the treatment of these cases early and so to prevent the extension of serious disease.

DR. HORROCKS said that *a priori* disease of the Fallopian tubes should be rare, since they had such an easy function to perform. In a careful investigation made at his request in the post-mortem room at Guy's Hospital by Drs. Goodhart, Mahomed and Carrington, during the last three years there was not one instance of papilloma of the Fallopian tube, and considering the large number of post-mortem examinations, this affliction must be looked upon as very rare. When it did occur, it would be very difficult to diagnose. He called attention to the fact that there was no hemorrhage in either of Mr. Doran's cases. Although some cases might be venereal in origin, and gonorrheal rather than syphi-

¹ Read on October 6th.

litic, it was a well-known fact, while syphilitic diseases of the vulva were very common, they were almost unknown in the cervix uteri, and thus were hardly likely to affect the genital canal still further away from the vulva. Still, anti-syphilitic remedies might be tried where papillomata were suspected, though probably nothing short of removal by the knife would be curative.

DR. GERVIS gave some particulars of a case of pelvic papillomata he had recently operated on. The growths covered the tubes and ovaries on both sides, and were scattered about the peritoneal surfaces. The patient had been tapped for ascites six weeks before Dr. Gervis saw her. He removed a moderate-sized cyst and as much of the papillomatous outgrowths as was practicable. The patient made a good recovery, and now between three and four months from the operation there has been no recurrence of the hydroperitoneum. Dr. Gervis would like to ask Mr. Doran how he thought papillomata on the peritoneum originated if they were not primarily tubal. He thought Dr. Routh's suggestion that they originated in syphilitic infection must be received with much doubt.

DR. CHAMPNEYS had recently admitted a case into St. George's Hospital, in which abdominal section had been done four years ago, and the peritoneum and liver had been found covered with papillomata, springing apparently from the region of the tube or ovary. Till two months ago, no symptoms had occurred, and then a soft swelling appeared in the line of incision. A little pus and serum was discharged, but no recurrence of the disease was found.

MR. BLAND SUTTON observed that he had made a careful study of Fallopian tubes removed for various diseases, and had found that, in cases of ovaritis due to extension of gonorrhea, a papillomatous condition of the mucous membrane was not infrequent, and he had found it possible to trace every gradation from simple or slightly branched villi to dendritic masses with narrow peduncles completely occluding the tube. Although papillomata of these ducts in a moderate degree are not rare, yet it is exceptional for them to attain such proportions as in Mr. Doran's case. There is good reason to believe that gonorrheal discharges may not only produce warts on the labia, but in the Fallopian tubes, if the inflammation extend in that direction, and even on the surface of the ovaries. He also stated that papillomata similar in their nature are to be observed in the oviducts of fowls when inflamed.

MR. ALBAN DORAN, in reply, said that Dr. Routh's remarks could not be directly applied to the two cases upon which the paper was based. There was no probability of venereal taint, at least in the first case. With regard to hydroperitoneum, he had explained how most diseases of the tube sealed up the ostium and saved the peritoneum from irritation; still, a mild catarrh of the tube, such as might be due to gleet, might fail to cause the ostium to be closed, and thus some discharge would escape into the peritoneal cavity and cause hydroperitoneum.

Dr. Horrocks had stated that he and two other highly competent observers had failed during long experience to find a case of papilloma of the tube in the post-mortem room of a great metropolitan hospital. In the same way, and notwithstanding active pathological work all over this country and the continent for thirty or forty years, pyo-salpinx and hydro-salpinx had also been

held to be a very rare disease, till Mr. Tait and Dr. Kingston Fowler had exhibited at different societies numerous specimens which proved that these disorders were not uncommon. In neither of the two cases was the disease diagnosed, nor could it be expected, since the disease was as yet practically unknown. The cases noted by Drs. Gervis and Champneys suggested that catarrh of a not papillomatous tube might set up, not only hydroperitoneum, but also papillomatous disease of the peritoneum. Mr. Doran agreed entirely with the remarks of Mr. Sutton.

ON THE OBSTETRICS OF THE KYPHOTIC PELVIS.

(Second communication.)

By DR. CHAMPNEYS.—The author referred to his first paper on this subject in Vol. XXV. (for 1883) of the Society's Transactions, in which he arrived at the following conclusions:

a. The head is usually more or less transverse at the beginning of labor, and not antero-posterior, as usually described.

b. During labor, the occiput rarely turns forward, deep transverse position is common, and posterior rotation not uncommon.

c. The head sometimes (probably not commonly) passes out of the pelvis practically between the tubera ischii in front, and the sacrum and coccyx behind, entirely neglecting the anterior part of the pelvis.

These conclusions were directly contradictory of the received accounts. The author refers to the criticisms on his description of the mechanism, and attempts to show they are not founded on fact, and are self-contradictory.

He then recorded an additional case carefully observed by himself, including the mechanism of labor and the moulding of the fetal head and its dimensions.

He analyzed two other cases recorded since his paper, making a total of thirty-five labors in twenty-two women.

These cases entirely confirm the opinions expressed in the former paper, and given above. The cases on which the usual statements were based cannot be found, if they ever existed.

DR. GALABIN did not think he differed much from Dr. Champneys. He had said in his book that the head was often found to enter the brim obliquely or transversely—he meant that this happened more often than not. He did not state that the mechanism described by Dr. Champneys was incorrect. On the contrary, he was prepared to accept it as true for the majority of cases. In Dr. Champneys' argument, it was implied that in kyphosis a case of extreme distortion was identical with one in which the head would be likely to fit tightly in the brim, but this was not at all the case. Kyphosis did not contract the brim, but enlarged it. Dr. Galabin explained the characteristics of kyphotic distention, and pointed out that there is a plane of the pelvis somewhat above its centre, the size of which is unaltered; all above this plane is enlarged, all below this plane, and especially the outlet, contracted. The only cases of kyphosis in which the head was likely

to fit tightly on the brim were not cases of extreme kyphotic deformity, but kyphosis combined with some cause of general contraction. Dr. Galabin thought that the position of the head would adapt itself to the brim, and in some of the recorded cases there was a tendency to such adaptation. In Dr. Harrison's case, the sagittal suture was more antero-posterior than usual, if not in some of the other cases collected by Dr. Champneys. He had met with two cases of severe transverse contraction in which the sagittal suture had been nearly antero-posterior. They were not instances of kyphosis, but more nearly allied to the Robert pelvis. He did not think the sacro-iliac joint was ankylosed, but the sacrum was not fully developed. In both cases, after cephalotripsy, the longest diameter of the crushed head rotated into a transverse position, and the fetus was delivered entirely behind the ischial spines, the distance between which was less than two inches. This agreed with the mechanism described by Dr. Champneys as common in the kyphotic pelvis.

DR. HERMAN said he accepted Dr. Champneys' main conclusions, that in labor with kyphotic pelvis the head did not, as a rule, enter the brim in any different manner from the usual one. He had published another case of labor with kyphotic pelvis beside the one quoted by Dr. Champneys (*British Medical Journal*, Vol. I., 1886, p. 294). In this, the head entered the brim in the ordinary first position, but with its long axis nearer the antero-posterior diameter than usual. He still believed that, as Dr. Galabin had pointed out, in cases where there was such a relation between the size of the head and that of the pelvis as to make it necessary for the head to enter in the most favorable position, the long diameter of the head would generally turn into the long diameter of the pelvis, which, in the kyphotic pelvis, is the antero-posterior diameter. If the head was small enough with relation to the pelvis, it might pass in any position. By exceptional cases, Dr. Herman did not mean exceptional in the amount of pelvic deformity, but exceptional in some circumstance or other, and he thought that the table in Dr. Champneys' first paper did contain a number of cases which were exceptional.

DR. CHAMPNEYS, in reply, was glad to hear that Dr. Galabin agreed with him that the mechanism which he had described was the usual one. Dr. Champneys still went further than Dr. Galabin in saying that there are *no* cases on record which bear out the description of the mechanism which has hitherto been received. He thought that the question was to be settled by carefully recorded cases, and not by any consideration of what might *à priori* have been expected from the shape of the brim.

A CASE OF LUPUS STRICTURE AND ATRESIA OF THE FEMALE URETHRA.

By DR. HERMAN. —The patient, aged 48, had had one child. She had suffered from trouble in micturition and occasional attacks of retention of urine for twelve years. She had at one time had an abscess in the groin, and had some operation done, which she described as the removal of a growth from the urinary passage. She came to the London Hospital suffering from retention of urine. No catheter could be passed, but a warm bath gave relief. Three days afterwards, the retention recurred. Not only

was the bladder full, but the urethra was distended into a sausage-like swelling. The meatus was blocked with fibrous outgrowths, between which no channel whatever could be found, not even for a fine probe. There was hypertrophy of one labium minus and perforation of the other, but no visible ulceration; but Dr. Herman concluded that the complete occlusion probably resulted from adhesion of ulcerated surfaces closing the narrow tortuous channel between the outgrowths which blocked the meatus. The channel was reopened with a trocar, and kept patent by the passage of bougies. The patient had since remained free from all trouble for three years. The author remarked on the sausage-like dilatation of the urethra, which showed that the retention was due simply to blocking of the meatus, and not to swelling or spasm of the canal. He remarked on the rarity of stricture from fibrous outgrowths at the meatus, and quoted two cases, the only ones he had been able to find.

DR. ROUTH asked if in this so-called lupus case any histological examination had been made on the specimen?

DR. HORROCKS asked if there was a history of syphilis, as the description of the case suggested its syphilitic nature? The term lupus of Dr. Matthews Duncan did not mean lupus vulgaris as seen on the face, nor syphilis with a lesion simulating lupus, but something quite different clinically and histologically. Dr. Thin had confirmed the latter by careful microscopical examinations.

DR. GODSON said he had seen a very similar case at Routh's Hospital.

REVIEW.

A PRACTICAL GUIDE IN ANTISEPTIC MIDWIFERY. By HENRY J. GARRIGUES, A.M., M.D.

This excellent little work of one hundred and twenty-five pages gives in brief compass a summary of the theory of puerperal septicemia; the methods of preventing puerperal infection in Maternity Hospitals and in private practice; the antiseptic treatment of puerperal infection, and a specific detail of the provisions rendered necessary to make the treatment complete and successful. Short chapters are appended on the antiseptic treatment of mastitis, of ophthalmia neonatorum, and on the treatment of the cord.

Dr. Garrigues is well known to be an enthusiast in the field of labor he has selected for consideration, but that has not prevented him from producing a guide in every way practicable. With pardonable pride, he relates the wonderful transformation accomplished in the N. Y. Maternity Hospital by measures he was instrumental in introducing, and the writer of this notice is able to add that the influence of Dr. Garrigues' teachings has been beneficially felt by all the lying-in institutions of this city.

Certain features of the antiseptic plan, such as the careful disinfection of the hands and forearms of the physician and nurse, the cleansing of the vagina during labor, and the washing of the

uterus after confinement and the introduction of iodoform suppositories where the hand or instruments had been introduced into the uterine cavity, or where the relaxation of the organ led to the suspicion of the aspiration of air, were successfully practised in Vienna, Prague, the Paris Maternity, and other of the large lying-in institutions of Europe, and to a limited extent in this country previous to Dr. Garrigues' series of memorial papers, but so far as I am aware, the occlusion of the vulva with the antiseptic pad is original with him. This addition is of immense service. In private practice, it adds greatly to the patient's comfort. In hospitals, it not only prevents infection, but by keeping the discharges pure, does away with the much dreaded hospital malaria, which formerly proved a most destructive agent to life.

In the Emergency Hospital, where there has been no death from puerperal fever in the last three years, and where the morbidity has been insignificant, the vulva, after being carefully cleansed and dried, is powdered with iodoform, the antiseptic pad is applied, and a ball of oakum is placed outside and held in place by a bandage.

The details of antiseptic midwifery require but moderate extra labor on the part of the attendants, and are well worthy of being mastered. In country practice, and in certain seasons in the city, the risks from confinement under old-fashioned methods are slight, but the object of science is to do away with risks altogether.

In the treatment of puerperal fever, the intrauterine douche is warmly recommended, but it cannot be too strongly insisted upon that, in a rightly conducted confinement, infection does not begin in the uterine cavity, and that the need of such injections is a confession of a faulty procedure.

There are two forms of fever which cannot be reached by the uterine douche, one derived from sewer poisoning, and the other from peritonitis, starting from some of the recently studied forms of tubal disease.

Dr. Garrigues favors the local use of solutions of chloride of zinc in puerperal diphtheria. He makes, however, a curious omission in quoting the writer's experience with the local application of compound tincture of iodine and persulphate of iron. In the epidemic which led to the removal of the maternity service from Bellevue Hospital, it was stated that, in the first twelve cases treated with the mixture there were two deaths, while in the second twelve there were but two recoveries. The argument was in favor of the local treatment of patches, which proved effective so long as the patches were confined to the vulva, but failed as the ward-poisoning became more intense, in consequence of gangrene attacking the uterine walls to which the applications could not be made directly.

Dr. Garrigues' work deserves many readers, and it is hoped that its influence may limit deaths from confinement to unavoidable casualties. The style is excellent, and the meaning clear. No possible objection can be made to any detail of the practice inculcated, though possibly certain features may admit of modification without detriment to the antiseptic principle.

W. T. LUSK.

ABSTRACTS.

1. **Friedrich Schwarz: Extrauterine Pregnancy—Elimination of the Fetus through the Uterus** (*Wiener Med. Blätter*, 1886).—Patient, æt. 27, two children, two miscarriages, last delivery a miscarriage at the third month, fetus and placenta having been manually removed at the end of fourteen days. Left cellulitis followed. Two years after, patient again pregnant, and during the second and third month had irregular hemorrhages, and great pain in the left hypogastrium. When S. saw her, the uterus was readily palpable, the fundus reaching midway between symphysis and umbilicus, the cervix high, the external os nearly closed, the uterus ante- and sinistroversed. In the neighborhood of the left tubo-uterine junction, a tumor, readily palpable, sensitive. The patient had lost the night before a half litre of blood, in which there was no trace of fetus or secundines, and she stated that a few days previously the waters had escaped. Since, from the history, the chances were the fetus was dead, and since from patient's appearance it was evident that further hemorrhage might be fatal, S. determined to dilate the cervix and empty the uterus. Full dilatation having been secured, the finger introduced into the cavity determined its emptiness, but at the uterine opening of the left tube was a piece of membrane, which was removed. The uterus was irrigated with carbolyzed water, but did not contract much. The next day renewed hemorrhage and pains. The cavity again explored with the finger detected membrane at the same site, and beyond the membrane a hard body which S. could not grasp in order to remove. The uterus began to contract energetically, as also the left-sided tumor. The pains continued, accompanied by hemorrhage, fever, and irregular chills. S. concluded he had to deal with an interstitial pregnancy. On the fifth day, a fetus was passed by the vagina, the pains ceased, the tumor largely disappeared, the patient convalesced well.

S. calls special attention to the following points in the above-recorded case: 1. The perimetric exudation, following the miscarriage which preceded by two years the interstitial pregnancy, so altered the left tube as to predispose to impregnation at the ostium uterinum. 2. The repeated hemorrhages during the course of the gestation may find a possible explanation in apoplexy at the placental site. 3. The enlargement of the uterus, even as in a case of normal pregnancy; the sudden disappearance of the tumor after the escape of the fetus; the escape of the fetus just before the period of rupture of a tubal gestation; the repeated digital examination of the uterine cavity as the probable cause of dilatation of the ostium uterinum and escape of the fetus; after the elimination of the fetus, uterine irrigation was followed by symptoms of collapse and peritonitis, resulting from the passage of fluid through the still dilated tubal entrance into the peritoneal cavity (this may be taken as additional proof that the pregnancy was interstitial)—these are noteworthy and instructive points.

E. H. G.

2. H. Fehling: The Administration of Drugs during Lactation, and the Effect of the Milk on the Nursling (*Archiv f. Gyn.*, XXVII., III.).—A series of interesting experiments with various drugs administered during lactation are herein described, and the effect on the infant noted. The results obtained were as follows: *Salicylate of soda*.—From one to three grams of this drug were given to the mother, and the infant put to the breast in from one to three hours thereafter. The urine of the mother and that of the child were then examined in a series of seven cases, with the result that the presence of the drug was determined in one hour after nursing, and the reaction was also apparent up to twenty-four hours. If the child were put to the breast too soon after the administration of the drug to the mother, no reaction was detected in the first urine passed. The following two experiments make the matter clear: 1. At 11 o'clock, two grams were given to mother; at 12, the child nursed, and again at 3; at 3, urine of both mother and child separately examined, and marked reaction of salicylic acid. At the end of twenty-three hours, no reaction obtainable. 2. At $1\frac{1}{4}$ hours, two grams administered; child nursed at $1\frac{3}{4}$ hours; removed urine gave no reaction at $2\frac{3}{4}$; child again nursed at $3\frac{1}{2}$ o'clock, and at $5\frac{1}{2}$. Urine examined in the evening gave reaction.

Iodide of Potass.—From one to two grams administered to mother. Iodine uniformly detected in urine and in milk. From the experiments it was apparent that the elimination of the drug from the fetus required longer time than from the mother, seventy-two hours in the first instance, forty-four hours in the second. As for the milk, the drug could readily be detected at the end of twenty-four hours.

Ferrocyanide of Potass.—This drug in doses of from one to two grams could not be detected in urine of child, but readily, ordinarily, in that of the mother. Why this drug should differ so markedly from the two others can only be explained on the supposition that the breast gland, like other glands, has a greater affinity for one drug than for another.

Iodoform.—After delivery, it is F.'s custom to sprinkle this twice daily over the perineum and in the vagina whenever these parts have been injured. Almost invariably the characteristic iodine reaction could be detected in the milk and urine of the mother, and usually in the urine of the infant. Practically, however, the health of the infant was in nowise affected, and in this respect children would appear to have greater tolerance for iodoform than adults.

Mercury.—Experiments on animals gave at times a positive and again a negative result. It may only be said that lengthy administration of mercury to the nursing mother may eventuate in the appearance of the metal in the milk, and the nursling be affected.

Acids.—Three grams of citric acid administered to mother during four days. None detected in milk; no effect on child. Same result from administration of hydrochloric and acetic acids. Inferentially, therefore, nursing women, if in good health, may eat whatever they please without fear of affecting the child.

Narcotics.—Of special importance is it to determine if opium, chloral, etc., administered to the nursing woman affect the infant. A case has been reported by Thornhill where twenty drops of tincture opium administered to a wet nurse caused her nursling to sleep for forty-three

hours. This is certainly a very exceptional result. In F.'s experiments, a solution of hydrochlorate of morphia (1 : 30) was given subcutaneously, in doses of 0.008 to 0.01 gm., in a number of cases. In the majority of instances, there was no appreciable effect on the child. Occasionally, it slept a little longer than usual. The physician, therefore, may, without fear, give to the nursing mother, when necessary, morphia subcutaneously in doses of from 0.01 to 0.02 gm. *Chloral*.—The conclusions in regard to this drug are : Occasionally affects the infant. Doses of from 1.5 to 3 gms. did not injuriously affect the mother. In the cases where the infant was nursed three-quarter hour after mother had taken the chloral, and then again in two to three hours, the infant showed the effects of the drug in restlessness and longer sleep. Where, however, the infant was not nursed for one and a half to two hours after administration of chloral, it was not noticeably affected. Inferentially, therefore, we may administer customary doses of chloral to nursing women, taking the precaution of allowing about two hours to elapse before applying child to breast, particularly when the infant is weak or of premature birth.

Atropia.—From 0.001 to 0.005 gm. given subcutaneously to mother caused, in the majority of the cases, wide dilatation of the infant's pupils, but this was the sole effect. It is safe, therefore, to give atropine in the usual doses to the mother without fear of unfavorably affecting the nursling. [In connection with this topic of administration of narcotics to nursing women, it is interesting to refer to the discussion at the New York Obstetrical Society (see this JOURNAL, April, 1877) on the subject of "The Influence on the Fetus of Medicines, Particular Narcotics. Administered to the Mother during Pregnancy and Labor." This discussion was inaugurated by Mundé, and participated in by Barker, Gillette, Peaslee, Thomas, and others. Gillette related a number of interesting cases where narcotics administered during labor seemed clearly to have affected the fetus. Thomas was inclined to the same belief from personal experience, but the general conclusion seemed to be that, whilst osmosis from the mother to the fetus through the placenta was possible, this should not deter us from using narcotics in appropriate doses during pregnancy or labor. This same conclusion is warranted from F.'s experiments in regard to lactation.] The last question considered by F. is as to whether a woman suffering from a febrile disease should nurse her infant. His conclusion is, that the child should be allowed to nurse as long as there is milk in the breasts. Naturally, the child should not be nursed as frequently as otherwise, in order not to disturb the mother, and it is self-evident that, when the disease is contagious (erysipelas, scarlet fever), the infant should be at once removed from the breast.

E. H. G.

3. Briggs : Uterine Calculus (*St. Louis Med. and Surg. Jour.*, 1886).—The patient was an enormously stout negress, aged 65, who had had more or less pain across the pubic region, accompanied by difficult micturition, for nearly twelve years. Fragments of stone were frequently found in the bottom of her chamber-vessel, and a diagnosis of vesical calculus had been made by several physicians. Examination of the bladder, by touch and sound, revealed no stone, but a tumor was found which pressed upon it posteriorly. In the vagina, however, the

finger came in contact with a hard, stony substance projecting from the external os. As manipulation of this body caused great pain, ten minims of a four-per-cent solution of cocaine were injected into the cervix, which was then partially dilated, the stone crushed with lithoclastic forceps, and removed. The fragments, reapproximated, formed a pyramidal mass, about three inches in length by two inches in width and one inch in thickness at the base, the apex of which pointed downwards, and whose total weight was in the neighborhood of nine hundred grains. The exact weight could not be determined, owing to the brittleness of the interior laminae of calcareous matter which, when crushed by the forceps, fell into dust and were lost in rinsing out the vagina.

The body consisted of a spongy, brittle, pumice-like mass of an inch or so in diameter, around which were concentric laminae of calculous substance. Some of these layers were of exceedingly hard, crystalline material, which were intercalated with others of a softer, apparently amorphous nature. They readily separated from each other, the outer side of each inner layer, and the inner side of the outer, being covered with a dark substance of organic origin, possessing a very offensive odor. The spongy central mass contained considerable of this organic matter, which seemed to pervade the areoles throughout.

Chemically, the stone consisted mainly of calcium carbonate and phosphate, and ammonio-magnesian phosphate. Microscopical examination of some of the organic matter taken from the soft areolated material which formed the nucleus for the denser outer layers showed it to be fibrous in structure; and a section of a minute piece, not so much decomposed as the greater portion of the organic matter, had a very strong resemblance to polypoid growth. B. believes that the calculus had its origin in some uterine tumor which, becoming atrophied after the menopause, served as a nucleus for the stone, and, being unable to find a similar occurrence recorded, considers the case unique.

[In the AMERICAN JOURNAL OF OBSTETRICS, vol. XII., page 700, is a paper by J. T. Everett on this subject, giving the history of a case where he removed a calcified fibroid by laparo-elytotomy, and a synopsis of the literature of the subject, including thirty-three well-authenticated cases; later, in vol. XIV. same journal, page 108, is a case reported by J. N. Upshur—thirty six cases in all—Briggs' being the thirty-seventh reported.]

B. H. W.

4. Grant: Pelvic Hematocele (*Chic. Med. Jour. and Exam.*, 1886).—Patient æt. 24, refined, delicate physique. On February 7th, 1881, during menstruation, while lifting a bed, felt a sudden, intense, tearing pain, and fell fainting to the floor. Suffered for several hours from pain, weakness, pallor, and vomiting, followed by pelvic tenderness, tympanites, and pains sometimes spasmodic. General condition improved until February, 1882, when there was an exacerbation of the symptoms, and for six months she was confined to bed and treated for pelvic cellulitis.

Came into G.'s care October 28th, 1882, anemic, emaciated, with septic symptoms, pain and heaviness in hypogastric and lumbar regions, nervous and sleepless. Examination disclosed a hard, unyielding tumor filling the pelvis and extending above umbilicus. Uterus immovable. The history indicating hematocele, G. determined to aspirate, and drew out

fifty-seven ounces of thick, tarry blood, the first containing much pus. Patient improved, but later the sac began to refill, and on December 21st he aspirated again, removing the entire contents, twenty-six ounces of decomposing blood. Again the patient improved, though about the middle of February the sac began to refill, and a third aspiration removed sixteen ounces of fluid which apparently contained no pus. Without removing the needle, tr. iod. co. $\frac{3}{4}$ ss., acid. carbolic $\frac{3}{4}$ ss., aq. $\frac{3}{4}$ ij. was injected and allowed to remain. The slight pain following was relieved by morphia. Subacute inflammation followed; the evening temperature, never before above 99° , was now 100° for a week. Patient recovered perfectly, using hot vaginal douches freely for several weeks, with KI and HgCl for a month, and quinine for three weeks.

In the early stage, hematocele does not demand operative interference. When the clot is not absorbed, but liquefied, then its evacuation is required. Aspiration is the preferable method, especially in large effusions, because safer. It is more thoroughly antiseptic than any operation by incision can be. Suppuration is not likely to be established by it. When the contents are offensive, or pus has formed, after evacuation wash out the sac with warm water, and then inject iodine and carbolic acid, one or both, permitting a certain quantity to remain.

[The objections to aspiration are that the more or less coagulated blood does not perfectly empty itself through the tube; that the cyst is very apt to refill, as in the case above; that septic symptoms are just as apt to appear, and that the mortality is about the same as after incision; and that by this latter method cure can be much more quickly effected. (See Mundé on "Pelvic Hematoma," this JOURNAL, vol. XIX., page 334.)]

B. H. W.

5. Imlach: Ovarian Abscess and Pyo-salpinx (Reprint from *Liverpool Medico-Chirurgical Journal*, 1886).—The author thus formulates his views in regard to these conditions, his deductions being based on one hundred and twenty-six operative cases. At the outset, it is a mistake to call the ovaries and tubes *uterine appendages*. It would be more consonant with modern physiology and pathology to call the uterus an ovarian appendage. In considering the etiology of tubal disease, we must remember that these organs may become infected either from the ovary or from the uterus. The muscular coat of the tubes may become greatly hypertrophied; the fimbriae may become matted together, and the uterine openings closed, in which double event the tubes are blown out like balloons and may burst. Such distended tubes are at times perched on the fundus of the uterus, at times adherent to the bladder, but in general are packed away in Douglas' space, and there adhere. Menstrual discharge is not found in healthy tubes, ovarian hemorrhage being always pathological, and leading probably to tubal disease. In case of *hemato-salpinx*, there is always distention, and the coats of the tube may be thin and translucent, the blood being seen through them. The fimbriated extremity may be closed and the ostium uterinum open, and in such a case of hemato-salpinx cure may be effected without surgical treatment; but the large proportion of tubes distended by blood result in pelvic hematocele. When this stage is reached, it is only by removal of the diseased organs, and sponging out the peritoneum, that cure results. *Hydro-salpinx* consists in tubes closed at both ends, and distended with from one to five ounces of thin sero-albuminous fluid

which rarely coagulates on standing. The mucous membrane and muscular coat of tube are nearly entirely obliterated. Exceptionally, the muscular coat is hypertrophied, and then it is safer to aspirate before removal, as it is impossible to forecast the nature of the fluid contents. The pain from tension is great, and I. has removed the appendages for hydrosalpinx twelve times without a death. *Acute pyo-salpinx* I. has never met with at operation, although he has seen the condition *post mortem*. There are many varieties of *chronic pyo-salpinx*: 1. Tubes not occluded, feeling like thick cords, and containing from a few drops to a teaspoonful of pus or muco-pus. 2. Tubes feel as if two or three beans were contained within them, and, when these thickened and dilated chambers are cut open, thick pus, with possibly dark-brown blood, is found. 3. The infundibulum may be distended with pus, the uterine half being somewhat thickened. 4. The entire tube filled with putrid pus. As an etiological factor of pyo-salpinx, gonorrhea must be mentioned, although it is not the sole cause.

As for the ovaries, both tubes may be distended with pus or other fluid, and yet these organs (ovaries) show but little sign of disease. Occasionally the ovaries are shrivelled up and packed away in Douglas' cul-de-sac. *Oöphoritis*, in a slight form, may occur without disease of the tubes. *Acute oöphoritis* I. has never met with. Inflammation of the ovary consists in the pathology of its cysts. Both hypertrophy and cirrhosis of the ovaries are found. When the physiological cysts of the ovary contain from a drachm to an ounce of dark fluid blood, and the membrana granulosa is soft and diffuent, or when these cysts contain a more or less disintegrated corpus luteum floating in blood, the ovary may be termed *hemato-cystic*, a common condition in hematocele and also with pyo-salpinx. The term *hydro-cystic* may be applied to the ovary where the Graafian follicles have become converted into large watery or dropsical cysts. This condition is distinct from cystoma, and is chiefly found in starved women, the starvation being due to prolonged lactation and dyspepsia, as well as to lack of means for securing necessary food. In such cases, rest and food will benefit, and only in case of complications is surgical treatment requisite. *Pyo-cystic* ovaries are those containing bland or putrid pus, or a mixture of blood and pus. Such cysts may contain from a few drops to an ounce or so of pus. In connection with ovarian abscess, the tubes may be simply congested, but usually they are thickened and purulent. The above conditions of the ovary are usually associated with the like conditions of the tubes, but the exceptions are numerous. The question as to whether the infection of both tube and ovary is secondary to uterine disease, or as to whether the disease is primary in the ovary and thence spreads to tube and uterus, is still open to much discussion. It is really the further extension of these diseases which adds to their gravity. Sooner or later, general or localized peritonitis is set up by overflow of the ovarian or tubal contents into the abdominal cavity. "Localized peritonitis is not peritonitis at all; it is only a threat ending in a failure. In the so-called pelvic peritonitis which accompanies inflammations of the appendages, the fluid in the peritoneum is almost precisely similar to the fluid in the tubes." Adhesion of the peritoneum and matting of intestine for the formation of a pelvic cesspool is the only part played by the peritoneum, unless general suppurative peritonitis, a dis-

ease fatal in a few hours, is set up. After the ovaries and tubes have poured their contents into the abdomen, they *may* heal up, and all that is requisite is drainage of the peritoneum. I. has done this several times with success; but generally this method is not sufficient. I. says that when he finds distinct disease of the ovaries and tubes, he always removes them, and that it will take good evidence to make him alter his practice. In case of hydro-salpinx with serous effusions, further development of disease is not to be feared, and if women care to endure the pain, let them. "But when it is a case of ovarian abscess or pyo-salpinx, there is not only pain and misery, but constant danger to life, and operative treatment should be urged upon the patient." I. has treated forty-one cases of ovarian abscess and pyo-salpinx with a mortality of three (seven per cent). "What experience teaches is the necessity of aspiration of pus before removal of the organs, and the careful use of sponges; for if fetid pus escapes and runs among the intestines, no amount of washing will insure recovery." Two patients, from whom I. removed the ovary and tube only on one side, became pregnant. Full restoration to health is not so rapid where there has been ovarian abscess or pyo-salpinx; membranous dysmenorrhea may recur once or twice after operation, but in from three to six months there is generally restoration to perfect health, and painless menstruation—in case of young patients—often reappears.

E. H. G.

6. Koeberle (Strasbourg): The Treatment of Uterine Cancer by Hysterectomy (*Nouv. Arch. d'Obstet. et de Gynécol.*, 1886).—K.'s views on this subject may be summarized as follows: Primary cancer of the body of the uterus is exceedingly rare, and, when it exists, the cervix is not affected for a long time. Cancer of the uterus usually begins in the cervix, in the neighborhood of the external os, and thence progresses throughout the cervix, extending to the vagina and the adjoining organs before it extends beyond the level of the external os. Just so long as the disease remains localized, that is to say, has not extended to the broad ligaments or the lymphatic glands which communicate with the lymphatic vessels of the uterus, so long is the body of the uterus sound, and it is therefore absolutely useless to remove it. On the other hand, in case of primary carcinoma of the body of the uterus, or of epithelioma, fungosities, etc., of the mucous membrane, the cervix being sound, it is useless to remove it. Total extirpation of the uterus, whether by laparotomy or by the vagina, being admittedly more difficult and more dangerous than partial removal of either the cervix or the body, hysterectomy should be reserved for those special cases where partial hysterectomy will not suffice for the complete removal of the disease. It follows, therefore, that abdominal hysterotomy should be applicable only to those very exceptional cases of primitive cancer of the body of the uterus, and to those affections of the mucous membrane of the body existing without implication of the cervix; and it follows, also, that vaginal hysterotomy should be reserved for the cases where the cervix, to the level of the internal os, is alone diseased. It being admitted then, "and every experienced surgeon will admit this," that total extirpation of the uterus, whether by abdomen or vagina, is infinitely more dangerous than vaginal hysterotomy, total extirpation should be rejected as unjustifiable, except in those cases where there exists complete prolapse of the uterus,

and where, in consequence, total extirpation is simpler and easier of performance than partial hysterotomy. If, during the performance of vaginal hysterotomy, the bladder is found to be diseased, the operation, whilst as useless as hysterectomy, is certainly less dangerous, and yet as laudable an attempt will have been made to prolong the life of the patient whilst not subjecting her to such extreme risks as are involved in kolpohysterectomy.

K. has performed kolpohysterotomy nine times in case of cancer of the cervix. In two cases recurrence; in one, too early to state definite result. He has operated in such cases only where the disease was localized in the cervix. In 1879, he performed abdominal hysterotomy for epithelioma of the uterine cavity. No recurrence as yet. In 1882, he performed successively kolpo- and abdominal hysterotomy on the same patient. No recurrence after three years.

K. performs vaginal hysterotomy after the following method. Patient on the right side: cervix exposed through Sims' speculum. Artificial prolapse of uterus. Vagina is entirely separated from the cervix, and any bleeding point cauterized. The cervix is then amputated either perpendicularly, or else by a wedge-shaped excavation. The surface is then cauterized. After-treatment by tampons, saturated in a liniment prepared from oil and lime (*oleo calcaire*) to which is added a little iodoform. Cicatrization is complete at the end of a month. (The operation above described is similar in its aim, and practically so in manner of performance, to the one described by Baker, of Boston, and which has yielded him such excellent results.)

To resume: hysterectomy for cancer of the uterus is *rarely* indicated. It is useless when the disease has extended beyond the anatomical limits of the organ. When the cervix or the body are singly affected or together without extrauterine extension, hysterotomy, whether vaginal or abdominal, will suffice, and is a far less dangerous operation than hysterectomy.

E. H. G.

7. Hacker: The Technique of Supra-Vaginal Amputation of Uterus (*Wien. Med. Woch.* No. 45, 1885). Wœlfier: Suspension of the Pedicle after Supra-Vaginal Amputation (*Ibid.*, No. 49, 1885).—The method of treating the pedicle, described and illustrated by cases in these papers, is original with H. The object aimed at, and accomplished, is so to suspend the pedicle under the abdominal wall and over the peritoneum, as to prevent intra-peritoneal infection, and, at the same time, diminish the delayed convalescence which is the rule after the extra-peritoneal treatment of the pedicle. The following description of the method is from H.'s paper: The pedicle is, after Schroder's method, covered over with peritoneum, and then suspended in the abdominal wound, so that the portion suspended lies extra-peritoneal, and above it the abdominal wound is united around a drainage tube leading to the pedicle. The name given to this method of treating the pedicle is "the inter-parietal." The steps towards suspension of the pedicle: After this has been trimmed off and disinfected, and surrounded, through suture, by peritoneum, a double-threaded needle is passed through the pedicle, about two centimetres from its apex, and out at both sides through the abdominal walls, an inch or so (to judge from the cut) from the abdominal incision. This suture is then tied over an iodoform compress, and the same step is

practised on the other side. The pedicle is thus suspended to the abdominal wall, lying between these walls above and the peritoneum below. The peritoneum is then sutured from above down to the pedicle, and below the pedicle the parietal peritoneum is joined by sutures to the peri-

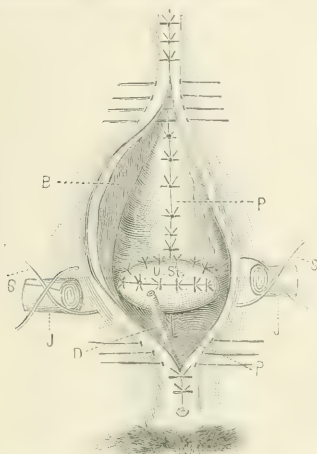


FIG. 1.—B, Abd. parietes. U. st., Pedicle. J, Compress. D, Drain tube. P, Peritoneum. S, Suspension suture.

toneum covering the pedicle. The abdominal incision is now closed over the pedicle, except at its lowest border, where the drain tube is introduced. In both W.'s and H.'s case the pedicle sloughed, and yet there

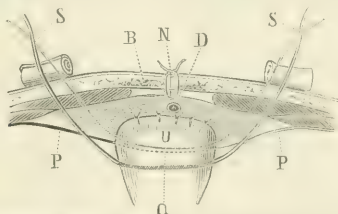


FIG. 2.—S, Suspension suture. U, Pedicle. D, Drain tube. B, Abd. parietes. N, Abd. suture. G, Point of union of peritoneum to ant. surface of pedicle.

followed neither sepsis nor peritonitis, because the pedicle was entirely shut off from the peritoneal cavity. The above-described method is, of course, not applicable to cases where the pedicle is short. Then the choice must lie between intra-peritoneal treatment of the dropped pedi-

cle, or else, as recently advised by Meinert, turning it out into the vagina through an incision into Douglas. The annexed cuts, from W.'s article, elucidate the operation.

E. H. G.

8. Feoktistow: The Cause and Purpose of Menstruation (*Arch. f. Gyn.*, XXVII., 3).—The object of this paper is to obtain an answer to the following questions: 1. Is ovulation periodic or not? 2. What connection exists between ovulation and menstruation? 3. Is there connection between menstruation and conception? The researches of Raciborsky, Pflüger, Leopold, and others, seem to prove that there is a decided connection between ovulation and menstruation. Autopsies on many healthy women, dying suddenly during menstruation, have revealed, in the majority of instances, the presence of a ripe or ruptured follicle on the surface of the ovary. The inference is therefore justifiable that ovulation accompanies menstruation, occurring either before, or just at the beginning, or at the end. This inference, however, is denied by many on the ground that the rupture of the Graafian follicle is known to occur also in the intermenstrual period, whence the opposite inference that there exists no causal relation between menstruation and ovulation. The weight of evidence at the present day points to ovulation being not dependent on menstruation, and also not periodic. Such being admitted as the case, how are we to account for the periodicity of menstruation? Leopold's explanation is the following: Menstruation is a phenomenon typical of the female organism, its motor cause residing in the ovaries, its immediate source being the uterus. Its periodicity is analogous to other vital phenomena of the organism—pulse and respiration for instance, the rhythm of which we are as unable to account for as for the regularly recurring monthly uterine hemorrhage. F. considers the periodicity of menstruation to be rather analogous to the erection of the penis and ejaculation of semen in the male. The friction on coitus leads in a reflex manner to ejaculation of semen. Ejaculation is speedy after abstinence, the more frequent the act of coition the greater the amount of friction requisite before the reflex is strong enough to lead to ejaculation. Similarly with menstruation. Each ripening follicle is a cause of irritation to the ovarian nervous supply. This irritation is propagated to the sympathetic system and its vaso-motor filaments. From the irritation of the vaso-motors there result dilatation of the pelvic blood-vessels and hyperemia of the pelvic organs, evidenced by the sensation of congestion and fulness in the pelvis which women experience about the time of the periods. When this irritation becomes powerful enough—it being added to by the ripening of other follicles—there results menstruation, which is the external evidence of the inward congestion. (This theory is rather fanciful, and takes absolutely no account of the not rare cases where conception occurs during lactation, in the absence of menstruation and yet necessarily in the presence of ripening of Graafian follicles.) It having been proved that ovulation goes on uninterruptedly, should not conception be as likely to occur at one time as at another? Heuser has investigated carefully the subject of conception and reached the following deductions: The majority of conceptions result from the coitus occurring within a few days after menstruation. During menstruation, the chances of conception increase the nearer coitus to the end of menstruation. The number of conceptions following

coitus before menstruation is small. At no time, however, during menstruation or in the intermenstrual period, is conception impossible. Since, however, ovulation goes on constantly, why, F. inquires, is conception more likely to occur at the end of menstruation and on the few days thereafter? The answer to this question is obtained from a study of the changes which occur in the mucous membrane of the uterus before and after menstruation. From the researches of Leopold and of Wyder and others, these changes may be briefly resumed as follows: Shortly before, during, and partially after menstruation, the uterine mucous membrane is hyperemic, the glands distended, the secretion increased, the muscular walls of the uterus softened, and the blood-vessels widened—in short the entire organ is in a condition of excessive nutrition. Coincidentally with the onset of menstruation, the epithelium of the mucous membrane becomes fatty degenerated, and, at the cessation of menstruation, this epithelium is renewed. It is evident now that the impregnated ovum can engraft itself more readily, and finds conditions suitable for its development whilst the above changes are going on in the uterine mucous membrane, than when this membrane is covered with intact epithelium. The shedding of the degenerated epithelium reaches its maximum at the end of menstruation, at a time when regeneration of epithelium is just beginning. The most favorable time, therefore, for the ovum to engraft itself is within a few days following menstruation. A further question to be answered is, how account for the cases where women have repeatedly conceived and yet never menstruated? At the outset, it has never been proved that the same changes do not occur in the mucous membrane of the uterus in such cases as where menstruation has occurred, and further, in many such women, close inquiry reveals the fact that, whilst there has never occurred menstruation in the sense of a red discharge, there has existed a more or less profuse white discharge, which takes the place of the customary red. In short, menstruation is not to be judged by the blood which appears externally, but by the changes which take place in the mucous membrane of the uterus, and these are the cause of menstruation. E. H. G.

9. Apostoli: The Treatment of Chronic Metritis and Chronic Endometritis by Intrauterine Electrolysis.—At the Association Française pour l'Avancement des Sciences, XV. Session, 1886, Dr. Apostoli read the paper, of which the following is an abstract: In the treatment of chronic metritis, and more especially in chronic endometritis, intrauterine electrolysis has been used for the past four years with most satisfactory results, Dr. Apostoli employing it in preference to all other means of intrauterine treatment. The immediate chemical action of the electricity is to produce a gradual destruction of the mucous membrane, this being soon followed by a process of retrograde metamorphosis, which favors the absorption of exudation, hyperplasia, or new growths.

The apparatus necessary to make an intrauterine electrolytic application is as follows, it being necessary that the operator should understand its use and action: A. A medical galvanometer graduated to two hundred milliampères, to measure the quantity of electricity used. B. A galvanic battery with large cells, so as to last a long time without being refilled. Thirty cells should never give less than two hundred milliampères. The best cabinet cell is the Leclanché. A good portable battery does not exist, though the bisulphate of mercury form will

answer for the purpose. C. An intrauterine electrode with insulated handle. D. Apostoli's clay electrode, which, when applied over the abdomen, produces neither pain nor heat, even with an intense current. E. Flexible and strong connecting cords.

The rules for the electrolytic application are: 1st. Have the patient in the recumbent posture, and give an antiseptic vaginal douche. 2d. Adjust the connecting cords between battery and electrodes, and apply the clay electrode over the abdomen, telling the patient beforehand how cold it will feel. 3d. Carefully introduce the warmed and oiled intrauterine electrode. 4th. The uterine pole should be positive in all hemorrhagic uterine diseases, and negative in others. 5th. Start the battery. We should never take a patient by surprise or make a too painful application. Some uteri are very irritable, and can stand only a feeble current at first. Begin with a mild current, and increase the strength as the patient becomes accustomed to it. Generally after the third application, the strength of the current can be raised to two hundred milliamperes, the strength being regulated by the tolerance of the patient, the duration, gravity, and extent of the disease. 6th. The duration of the sitting should be from five to ten minutes, according to the intensity of the effect desired and the reaction of the parts. 7th. The application may be repeated every second day or once a week, according to the necessities of the case. 8th. A rest in bed of a few hours must be observed after each sitting to prevent an inflammatory reaction, and to aid the effect produced. 9th. Vaginal injections of a carbolic acid or mercury bichloride solution should be used morning and evening.

This simple and inoffensive treatment is a galvano-chemical destruction of the mucous membrane of the uterine canal, either by the acid or basic pole, as the case may require. The destroyed mucous membrane may be replaced by a new and healthy one, or may serve as a surface for exudation so long as may be required. Apostoli has shown the beneficial effects of this treatment in a large number of cases, improvement being shown after the first few applications, and cure soon following. The patients are only obliged to keep in bed for a few hours after each sitting. Compared with curetting, this treatment is more lasting, easier, and less apt to be followed by inflammation. J. S. CARREAU.

10. Bumm: The Etiology of Puerperal Mastitis (*Achiv f. Gyn.*, XXVII., 3).—Further investigations in this direction lead the writer to the following general deductions: There are two ways in which the microbes may invade the breast—through surface lesions, and through the acini ducts. In the first instance, there results an acute abscess, the infectious material spreading over the breast, and thence to the cellular tissue, and later invading separate lobules. This type of mastitis is usually caused by the streptococcus pyogenes, although it has not been proved that the staphylococcus may not be at the bottom of a similar process. In the second instance—infection from within the ducts of the glands—there results a parenchymatous mastitis, beginning as an inflammatory hardening of one or more lobules, which, to the examining finger, feel like hard lumps deep under the surface. The process leads to purulent infiltration of the periglandular tissue. The riper the abscess the more confused become these differential diagnostic points, so that eventually it is impossible to say whether the mastitis began as one form or another.

E. H. G.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] FEBRUARY, 1887. [No. 2.

ORIGINAL COMMUNICATIONS.

THE GALVANIC TREATMENT OF UTERINE FIBROIDS :
FULL TEXT OF FIRST FIFTY CASES.

BY

EPHRAIM CUTTER, M.D.,
New York.

I HAVE decided to present these cases in full, that the origin and progress of this treatment may be better known and understood. Besides, some cases, after the lapse of a decade, having proved cures which were previously reported as partial successes, it seems right to insist that time is an element that must not be overlooked in the consideration of this method.

They will bear careful reading, for nearly every one has its individuality and special lesson.

For example : One shows the effect of the penetration of the current without anesthesia ; another, the want of encouragement from the first operations ; another, the formation of an abscess ; another, malignancy ; another, the difficulties of penetration and the evolution of the electrodes used ; another, the rapid disappearance of the growth ; others, the relief from pain ; others, the disappointment of no good result ; others, the result in death ; and so on.

I give due credit to Dr. Gilman Kimball, of Lowell, Mass., with whom the operation was pioneered by me.

APPARATUS EMPLOYED.

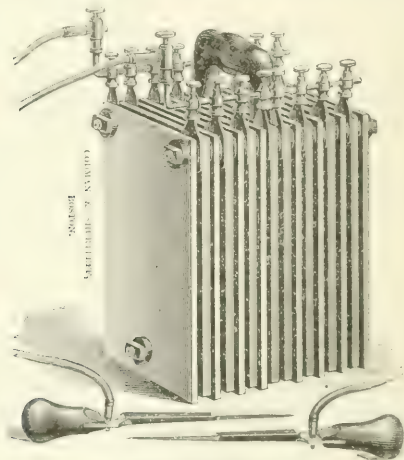
The Battery.—Stœhrer's pattern. Eight (8) plates of carbon, nine (9) by six (6) inches; eight (8) plates of zinc, nine (9) by six (6) inches.

The carbons were one-fourth inch thick.

The zincs were one-eighth inch thick.

They were arranged so that the zincs should come on the outside; thus: zinc, carbon, zinc, carbon, zinc, carbon, zinc, carbon, carbon, zinc, carbon, zinc, carbon, zinc, carbon, zinc.

The carbons are connected on one side, and zincs on the other.



Battery and Electrodes.

1884. Apostoli reports his highest power to be one-fifth ($\frac{1}{5}$) ampère, and his lowest power one twenty-fifth ampère.

About 1874, Mr. Moses G. Farmer, of Boston, the most noted mechanical electrician of his day, tested the battery and found it exceeded all his measuring instruments in power.

Later, Dr. A. C. Garrett, of Boston, went to large expense for a voltametre, but this was insufficient to measure the battery's full power.

1886, December 14th. The battery, in working condition, was measured by Stout, Meadowcroft & Company, of 84 Fulton

street, New York, and found to have *twenty-seven* (27) *ampères* direct current.

Solution.—Potassic bichromate dissolved in cold water to saturation. Add to one gallon of this saturated solution eight (8) ounces of commercial sulphuric acid.

The conductors are connected with the battery by binding screws on the ends of the rods of copper. They are made of strands of *copper-wire* covered with knit worsted. Those made of pure silver are more flexible and lighter. The writer has a pair of them and prefers them to the copper, except for the expense.

The electrodes are peculiar. Were it not for them, this series of cases would probably never have existed. It is a small matter, perhaps, to speak of, but *not* a small matter *practically*.

Certain, controllable, and deep penetration has been regarded as an essential. It would not answer to have an electrode that



Abdominal Penetration.

would twist, jump, or shoot off wildly among the viscera. The fibroid alone must be penetrated deeply and in the direction which the operator deems the most desirable. The following device has been found to answer every purpose: An ordinary surgeon's director was taken, its point and edges were sharpened, an ebony handle was fitted to the flattened end, and two inches of the larger end were japanned for insulation. The dimensions are as follows: Length of instrument over all, eight and one-half ($8\frac{1}{2}$) inches; of blade, four and seven-eighths ($4\frac{7}{8}$) inches; width of blade at widest part, three-eighths ($\frac{3}{8}$) inch. The foramina in the metallic portion of the handle are sufficiently enlarged to readily take in the ends of the conductors. The angle made by the two wings of the blade may be represented in section by the letter V. The point of the angle is made dull. The effect of this arrangement is to draw the tissues over the sharp edges, represented by the free ends of the letter V, and thus cause a ready section of the tissues penetrated. It is evident also that the union of the two blades at this angle offers

a great resistance to bending in any direction, as seen in the firm union of the nasal bones of the face, or in the corrugation of metallic life-boats. It has been found that these electrodes become granular and dull by use, rendering it advisable to have them sharpened often. It has also been found that the introduction is facilitated by making punctures through the skin with a lancet.

Why was this kind of a battery used?

Why were not small cells employed?

It is not the purpose of this paper to discuss, but rather to report; still a few words may be given here in reply to these questions. In the beginning of our essays, we had no practical guide to go by, as the field of uterine fibroids and galvanism was an unexplored one. In the case of such dense structures, we did not expect to burn or chemically decompose them, but we did try to impress them in such a manner that the processes of nutrition should be so changed by this action that the normal balance might be restored. (Remember we thought only of *arresting* the growths.) We were impressed with the idea that *quantity* and *not intensity* was what was wanted; that, to have the experiments successful, it should be a *large current*, thoroughly applied; and that the way to secure quantity was by having large surfaces of metal.

But we do not insist upon our ideas being carried out to the letter. We are willing to yield the point and say that our battery is not the best, whenever any one will produce the favorable results that we are happy to record, by any other battery. We have looked in vain elsewhere for such a series, and *so long as our experience is what it is*, we do not *conscientiously* feel *justified* in *practising* this operation with *any other* battery, or indeed *without* any battery, as some have suggested.

To use a homely phrase, "the proof of the pudding is in its eating," and we must be governed by our practical results. We cannot set aside our apparatus for another which has not been tried so thoroughly or satisfactorily as this has been. In this position we have been encouraged by the advice of electricians who have personally examined the battery and gave the advice to continue its use, though against their own interest to do so.

Modus Operandi.—"It is well understood that these growths are composed of a feebly organized tissue possessing but a low

degree of vitality; consequently they tolerate local interference badly. In *two* well-marked cases, where the surgeon, after having begun an operation for the removal of an ovarian cyst, very soon found himself attempting to dislodge a large fibroid uterus, the operations were suspended, and the patients recovered. Immediately following the recovery, however, the fibroid growths began to sensibly diminish in size, and ultimately they disappeared altogether. So, may not the shock or force from a powerful galvanic battery, communicated to the tissue of a fibroid, so far interrupt or interfere with its nutrition as not only to arrest further development, but eventually to effect its removal altogether?" (Kimball.)

It is possible that there may be something else in the composite galvanic current that remains to be recognized by physicists, especially when it is caused to traverse a living body which has been proved by scientists to be full of currents of electricity. May it not in disease be conceived of as capable of modifying the functions so as to restore their normal balance? In our present state of knowledge, inquiries or speculations like these are of no great practical value, inasmuch as it is not necessary to understand all the rationale of things before their use. It is asking too much to *insist* upon a rationale. As the one born blind mentioned in Scripture history said, when questioned after having been restored to sight, "one thing I know, that whereas I was blind, now I see."

What is here is the evidence of what has been done, and the means by which it has been done, and this evidence is subject to the general rules that govern evidence in the court of common sense.

Application of the Electrodes.—The patient is anesthetized and the electrodes are introduced deeply into the substance of the growth so that they do not approach each other within a half inch.

Where?—This usually depends upon the circumstances of the growth. If unilobar and in the cavity of the abdomen, one electrode is passed through the skin in on one side of the tumor, and the other in on the other side of the tumor. Or if the lobe or tumor is small, one electrode may be passed under the other at a distance of half an inch. If the tumor occupies the cavity of the pelvis and has several lobes in the abdomen, one electrode may be pushed in from the rectum or from the vagina, and the

other electrode may be passed in through the abdominal walls. If the fibroid is confined to the pelvis, both electrodes are to be introduced through the rectum or vagina. Care should be taken to avoid any strongly pulsating blood-vessel. It has been found immaterial as to which electrode is passed in or placed first.

How Long did the Applications Last?—They have varied from three to fifteen minutes in duration. The latter time is too long. Our best result was accomplished with only three minutes' continuance of the current. The length of time was adjudged from the systemic symptoms. If the pulse became accelerated, the respiration hurried, the face pinched, the countenance hippocratic, and the skin sweaty and cold, it was thought time to stop. Etherization masks these symptoms somewhat, and should be allowed for, that is, not to push the time too far. The first operation should be short, and, if well borne, the time may be increased in future operations.

How Often may Applications be Made?—This depends upon the case. It has been done every day for a week. Usually once a week or a fortnight. If the systemic and local effects were not severe, the operation was renewed oftener than when the effects were profound.

Treatment of Patients.—Usually put to bed and arrangements effected whereby they may lie quiet for a few days.

If, on the next day, they have no pain, feel well, have a good pulse, normal skin, good appetite and morale, they have been allowed to move about at will. If they have had severe pain, morphia subcutaneously and hot alcohol and water, equal parts, to the abdomen are resorted to. If there was prostration, stimulants were used. It is a severe operation and should be so regarded by the patient in order to insure proper care and nursing. It is astonishing how well some bear the operation.

RESUMÉ OF CASES.

Series 1; non-arrests, seven cases.

Series 2; fatals, four cases.

Series 3; arrests, twenty-five cases.

Series 4; relieved, three cases.

Series 5; cured, eleven cases.

Total, fifty cases.

SERIES I.; NON-ARRESTS, SEVEN CASES.

CASE I.—*Fibro-myoma; two trials of electricity; improved feelings after second operation, otherwise no favorable result; patient disgusted and refused further applications; death from hemorrhage and exhaustion; autopsy verified the diagnosis. This was the first case in which it was employed. Operators, Ephraim Cutter and Gilman Kimball.*¹

Mrs. Robert Pierce, of Melrose, Mass., a lady of 36 years, first consulted me August 15th, 1870, on account of a large tumor in the pelvis and abdomen, which interfered with micturition. It was first noticed about four years previously, when she directed her husband's attention to it, after a recent confinement. Dr. M. Parker, the family physician, had latterly been obliged to use a catheter, although the dysuria had troubled her somewhat for six months previously, and was worse at the menstrual epochs. Mrs. P.'s youngest child at the time was four years old. About two years after the birth of this child, menstruation was arrested for three months, at the end of which time she discharged, *per vaginam*, a hard mass, the size of a fist, in which no trace of a fetus or placenta could be detected. At my first visit, a careful examination showed the presence of a large hard tumor, extending from the os uteri to a space midway between the pubis and umbilicus, and occupying the posterior uterine wall, with which it seemed to be incorporated. The sound passed easily to the depth of four inches. The os readily admitted the forefinger as far as the whole finger could reach; the anterior wall was thin and distensible, and the whole tumor was quite movable. Dr. Ephraim Cutter, of Woburn, saw the case in consultation a few days later, and fully concurred in the diagnosis, namely, fibroid tumor of the posterior wall. The patient was subsequently visited by Dr. W. F. Stevens, of Stoneham, and Day, of Wakefield, and Dr. Holmes, of Lexington, and we all arrived at the conclusion that it would not be advisable to attempt removal of the tumor by abdominal section, which at that time seemed the only feasible process.

On two different occasions towards the close of August, free incisions were made in the tumor with Atlee's knife, each time followed by moderate bleeding and temporary relief.

It was hoped that the vitality of the growth might be in this way destroyed, but its great size prevented so desirable a result. Early in the morning of October 8th, 1870, I was sent for on account of severe flooding. Dr. Parker had visited her through the night, and had plugged the vagina with a large sponge, which I removed, and injected a strong solution of the persulphate of iron (Monsel's styptic). No farther hemorrhage occurred, but during the following night a fetus of three months, enveloped in the membranes, was expelled. Examination, a week later, showed

¹ Reported by Dr. W. S. Brown, of Stoneham, Mass. Published in Philadelphia Med. and Surg. Reporter, Feb. 8th, 1873.

that the tumor itself was reduced in size slightly. During the spring of 1871, the patient's husband had his attention directed to an operation performed on General Kilpatrick by Dr. R. P. Lincoln, of New York, for the removal of a tumor in the neck as large as a goose's egg by means of electrolysis, which proved entirely successful.

Mr. Pierce visited the general soon after, and ascertained that the newspaper account was substantially correct. General Kilpatrick's tumor was diagnosticated as "venous erectile," liable to sudden distention to twice its ordinary bulk (a full account of the case may be found in the *New York Medical Record*, December 15th, 1870, Vol. V., No. 20), whereas in Mrs. Pierce's case the tumor was nearly as hard as cartilage, and not subject to much variation in size. Still it was concluded to make a trial of electrolysis, which was done *twice* under Dr. Cutter's supervision.

First operation. Operator, E. Cutter.

On the first trial, August 21st, the two needles were passed side by side through the vagina, penetrating barely an inch. The current from a large Stœhrer's battery was applied for fifteen minutes with no appreciable result.

Second operation. Operator, Gilman Kimball.

A second attempt was made eight days later with stouter needles, but the tumor proved so hard and resistant that they penetrated but little farther. Dr. Gilman Kimball, of Lowell, was present at the second trial, and inserted the needles. The current was passed for ten minutes. No change resulted. No diminution in bulk, and no softening. Two days afterwards, a severe flooding occurred, but not caused by the operation. *In fact, she felt better than usual during these two days.*

Friends from a distance came on a visit. In the afternoon, she ironed some clothes, and during the following night she was seized with flooding, which continued at intervals for ten days. From October, 1871, to December, 1872, the day of her death, I did not see Mrs. P—— again professionally. She was decidedly opposed to making another trial of electrolysis. She rallied pretty well from the hemorrhage, which occurred in September, 1871; but the flow at the monthly periods was more profuse after this till January, 1872, when it was slight at first, but continued to dribble away during the whole month. Towards the end of February, a hard lump, about the size of a hen's egg, came away. It was preserved for examination. Her general health about this time became much reduced. In March, she had another severe flooding, after which she became anemic and jaundiced-looking, and her appetite failed. During the summer months, she improved a little. In October, 1872, she was again prostrated with hemorrhage, which continued for three or four days, and in November the bleeding returned and lasted for three weeks. One week before death, the flow suddenly stopped, and did not return again. She was confined to her bed during the last three

weeks of her life, and was latterly troubled with attacks of nausea and vomiting.

Post-Mortem Examination.—Thirty hours after death; only the abdomen was opened. Body not emaciated, skin yellow, intestines distended with gas, stomach slightly congested, but otherwise healthy; liver normal. The tumor occupied the true pelvis and also the front part of the abdomen nearly to the umbilicus, but was entirely free from adhesions. The fundus uteri and greater part of the body projected anteriorly and superiorly with the ovaries (which were twice the natural size), Fallopian tubes, and round ligaments. The whole mass was carefully removed. It weighed nearly four pounds. On making a section through the inferior part, the tumor was found to be fibroid, enveloped in a capsule about one inch thick. The tumor was grayish-white, the capsule red. A microscopical examination of the tumor proper demonstrated it to consist principally of connective tissue closely interlaced, along with a few non-striated muscular fibres.

Remarks.—This case is quoted somewhat in full because it gives the natural history of a uterine fibroid terminating of itself in death. It is also interesting as being the first case where a regular and determined effort was made to try the effect of electricity upon a uterine fibroid with the desire of arresting its growth, though unsuccessful. I say “determined,” because if there had not been a fixed and settled *determination* to settle the question, the result of this case would have deterred us from any further efforts, and the present series of cases would not have been collected. The fact that the general health was improved after the second operation ought to have encouraged the operator, but it was overlooked in the general cloud of dissatisfaction that settled down over this case.

CASE II.—*Large myo-fibroid; softening and fluidity followed first operations; tumor larger; case obstinate; Abdominal section successful; recovery. Operator, Kimball.*

Mrs. M— resides in Waltham, Mass., 40 years old. She had a uterine fibroid, interstitial, involving the body, but not the cervix. It was not uniform, but consisted of several lobes, and was of a size to suggest a six months' pregnancy. It was attended with no hemorrhage. The principal inconvenience was a sense of fullness and pressure. Occasionally it interfered with the bladder, causing frequent micturition. Dressmaking being her occupation, she was obliged to abandon it for the time on account of the disease.

First Operation.—April 21st, 1874, she came under the treatment by galvanism. The patient was anesthetized, and the electrodes were thrust into the tumor through the abdominal walls to the extent of three and a half inches. The galvanic current

was continued for ten minutes. The impression upon the system during this time was not specially marked, and no special change of condition, local or constitutional, followed. In three days, the patient felt as well as if nothing had ever been done.

Second Operation.—On the 24th, galvanism was applied the second time. The effect was more marked. Some feverish action, nausea, and occasional vomiting followed. No appetite. This state of things continued for four days.

Third Operation.—On the 24th of May, she returned for treatment. Tumor of abdomen larger. The operation was repeated for the third time, and showed the disease to be complex, probably fibro-ovarian, as there was a free discharge of serum from the aperture made by one of the electrodes. This discharge continued for some time. It may be here remarked that this oozing of serum occurs frequently when there is ascites existing in connection with cases operated upon in the manner alluded to here.

Fourth Operation.—Other operations were resorted to, and the case proved to be obstinate. Abdominal section was resorted to for the reason that it might be ovarian. It was found to be a pedunculated fibroid attached by a broad band to the uterus. This was severed. The fibroid was removed, and the patient made a successful recovery. The interstitial uterine portion gives no trouble or evidence of its existence. It is possible that the galvanism had something to do with the softening and fluidity. But this case is counted as one in which the galvanism had no effect, because laparotomy was resorted to before relief was obtained.

CASE III.—Enormous fibro-myoid; Atlee's treatment of sal ammoniac tried faithfully for ten years; electrolysis repeatedly applied; all without result; life became such a burden that laparotomy was resorted to; tumor removed; death from peritonitis fourteen days afterwards. Operator, Kimball.

Mrs. S., of Boston, Mass., presented herself in 1872. She appeared larger than a woman at term—of enormous size. She was about 40 years of age. Her general health was good. She suffered only from the looks, the great weight, and the distention. Face and complexion healthy. She had used the chloride of ammonium continuously and thoroughly for about two years without any success, still she was desirous of doing anything that might promise relief, and strongly urged the removal of the growth by the knife.

Several operations.—Electrolysis was thoroughly resorted to several times. She was not made sick at all. No systemic or local disturbance occurred. The tumor was in no way affected, not diminished, not softened, not made sore. She continued her original entreaties for removal by abdominal section. At last her breath became very short, and an excessive serous vaginal discharge prostrated her. Life became a burden, and so long as there was

a possibility of relief, she was willing to run any risk. In October, 1876, with the full understanding and consent of all parties interested, laparotomy was resorted to, apparently at first with success. The tumor was readily and successfully removed. Present, Drs. F. Semeleder, of Mexico; Bixby, of Boston; Carr, of Concord, N. H., and Cutter, of Woburn.

It was pedunculated. There was so little shock after the operation that the pulse showed no acceleration or disturbance whatever. The patient desired to see the tumor, and inquired after the details of the operation with the coolness of a third person. But in the course of fourteen days she died of peritonitis—a result not commensurate with her courage.

CASE IV.—*As yet no relief to symptoms; in progress. Operator, Kimball.*

Miss D—, school teacher, middle aged, 35 years; has a fibroid tumor of the uterus, and is now under treatment. She has submitted to a few operations with as yet no relief.

CASE V.—*Operator, Kimball.*

1877, February 1st. A married Irishwoman, childless, living in Lowell, was operated upon by galvanism at this time for uterine fibroid. No injury or other effect was produced except to frighten her husband, who, when Dr. Kimball proceeded to his house to apply the battery the second time, strongly objected, and further treatment was suspended.

Not heard from since.

CASE VI.—*Fibro-ovarian; one puncture; percutaneous galvanism advised. Operator, Cutter.*

1877, June 11th. Mrs. M. E. H., Chicago, Ill., 40 years of age. Twenty-two years in married state. General health poor. No children. Five or six miscarriages. Dyspepsia. Constipation. Bleeding piles. Kept awake by pain at night, obliged to take morphia for the relief of pain over the left ovary. Commenced the trial of ergot April 27th, 1876. At this time the abdominal measurement was forty-eight inches, now it is thirty-four inches. Present complaint is of a distress in the epigastrium.

Physical signs of ascitic fluid. Multilobar tumor in abdomen, and *solid growth* in pelvis attached to and incorporated with the uterus.

Diagnosis.—Fibro-cystic. This was confirmed by Prof. Byford Drs. Fisher, Hyde, Clark, Fitch, W. Charles Smith, all of Chicago, and Dr. Jones, the attending physician. All of these gentlemen, by request of the writer, personally examined the case beforehand. The battery was tested and the patient etherized. One electrode was plunged into the left tumor which felt the hardest. The instrument penetrated with great facility, and a dark adhesive fluid escaped by the groove of the electrode. Under the microscope, this fluid displayed Gluge's and Drysdale's ovarian cells, showing or helping to show that the cyst entered was

ovarian. The operation was not completed in this form. On account of the fluid nature, the small battery hitherto described was employed per cutem. Report of result has not reached the writer. The case was evidently fibroid combined with ovarian disease, as decided by the pelvic portion. It is placed in the list, as its history shows the difficulties in the way of diagnosis. It was a mistake not to have aspirated previously to the application of the galvanism.

Subsequently, laparotomy by Dr. Jones (I think) cured this case, confirming the above diagnosis.

CASE VII.—*Large tumor; no benefit resulted from several applications of galvanic electricity. Operator, Kimball.*

Mrs. M., of Waltham, May 13th, 1875; is aged 44 years, and been married nineteen years. Never had children. A fibroid growth of the uterus began to be perceptible seven or eight years ago. Probably it had existed some years before this time. This is inferred from the fact that she has suffered from menorrhagia ever since she was married. Its size at present indicates a weight of twelve to fifteen pounds. It extends well up toward the umbilicus, also downward into the vagina. Hemorrhages are less frequent than formerly, but more persistent and with less loss of blood. She suffered from downward pressure and abdominal distention. She has lost flesh of late, and finds the labor of dressmaking fatiguing and unusually irksome.

First operation.—Electrolysis was applied this day. One electrode was thrust into the abdominal portion of the tumor, and the other per vaginam into the inferior portion. The effect was marked by no special symptom other than a sense of nervous prostration.

Second operation.—Electrolysis was repeated on the 11th of June. During the interval she has suffered somewhat on account of having, as she says, taken cold, which caused some fever, loss of appetite, and loss of strength. She also says she has had daily chills, followed by fever and sweating; however, she has recovered from the effects of the cold, and the chills have ceased; both electrodes were introduced through the abdominal walls; the operation was well borne. No unpleasant symptoms followed.

Third operation.—June 15th. Galvanism repeated through the abdominal walls.

Fourth operation.—17th. Galvanism repeated. One electrode passed through the tumor above the pubis, and the other per vaginam. No relief followed these trials of electricity. The tumor was not arrested.

SERIES II. FATAL, FOUR CASES.

CASE VIII.—*Fatal case; death caused by the operation four weeks after third application; asthenic type of typhoid fever; tumor fibro-cystic, at least ten years' standing. Operator, Kimball.*

Miss H., age 28, resided in Portsmouth, N. H. In 1864, she consulted Dr. Kimball on account of an abdominal tumor. She had supposed her case to be ovarian. It proved to be a fibroid uterus; she was told that nothing could safely be done surgically, and she was advised to take no medicine with the view of its doing any good so far as the tumor was concerned. Ten years elapsed and she heard of some favorable results from the use of galvanism. This induced her to make a visit to Lowell, especially for the purpose of giving it a trial. Although she was somewhat run down, and in a not very promising condition, still her importunity was yielded to rather against her surgeon's best judgment.

First operation.—In June, 1874, the battery was applied in the usual manner. It was the day after her arrival. The tumor was found to be very much larger than when first seen ten years before. It was also softer. An inexperienced, or rather, a surgeon unacquainted with the case, would have taken it to be an ovarian multilocular tumor; it was fibro-cystic. An exploratory operation was made with an aspirator, puncturing what seemed to be a cyst. Nothing was evacuated but bloody serum. The electrolysis was applied in the usual manner, the electrodes penetrating the abdominal parietes. A copious discharge of bloody serum followed the introduction of the electrodes, running through the grooves of these instruments. The flow continued for twenty-four hours through the punctures after the electrodes were withdrawn. The general effect of this trial of galvanism was not remarkable, except that it seemed to be followed by a decided diminution of the tumor, owing, perhaps, only to the amount of fluid escaping through the punctures.

Second operation.—A second operation was performed later in June, 1874. On this occasion, there was a more decided impression made upon the system. There was pain in the abdomen, vomiting, hebetude, headache, fever, prostration, etc. These unpleasant symptoms disappeared in the course of twenty-four hours, so that on a later date of June a third operation was performed.

Third operation.—The symptoms following this were more severe than on either operation before. The vomiting was severe, pain greater, and more prostration. The leaking, however, through the punctures was less. All the bad symptoms disappeared in the course of the next day. The patient was confident that the tumor was much lessened in size. But the symptoms of profound exhaustion and extreme weakness recurred soon after. This was combined with an asthenic type of typhoid fever which finally put an end to her life in about four weeks after the date of the last operation.

Remarks.—This case was the first fatal one of the series which might be directly charged to the operation. It shows the impropriety of one's yielding up the dictates of best judgment to

the importunities of a patient who has become possessed of the idea of having an operation of a given nature performed in the hope of relief. The *copious* discharge of fluid was an unusual symptom. It is often seen in ascitic cases in a slight degree, and usually, when limited, causes no trouble. It is possible that the case was malignant. There was no autopsy. When one considers the ordinary result of punctured wounds of the peritoneum, it is certainly remarkable that no more patients have perished under the present operation. Indeed, one thing that these cases go to prove is, that galvanic peritoneal punctural penetration can be effected with such comparative safety. One death in twelve cases is not a very great risk to run in abdominal surgery. In all these cases, the patients have been made to understand the risks that are undergone in this operation, and that if they choose to run them, the operation will be undertaken upon their own responsibility. The patient in this case presented herself with her mind made up to submit to the trial of this operation. In this psychological condition nothing is satisfactory to the patient except the performance of the desired procedure, and when held back she says: "I don't care if I do die." This mental condition is a curious one. The fatal result, however, teaches that the surgeon should not allow his acting against the dictates of his judgment.

CASE IX.—*Fibro-cystic; one operation; patient, contrary to orders, got up, dressed, went into cold rooms, and was seized with chill; died in six weeks; cyst ruptured opposite to punctures; disobedience the cause of death. Operator, Kimball.*

Mrs. B., seen in consultation with Dr. D. Humphreys Storer, aged about 50 years; no children. Her tumor had existed for one year previous to the date of her operation, in Feb., 1875. It was packed in the pelvis and also presented itself in the abdomen. Both portions were identical with each other. The feel was hardish and the sensations of touch it gave were equivocal. I thought it might be ovarian, but decided it was fibroid and she submitted to *one operation* as above with the battery. The electrodes were passed through the abdominal walls, and the current was continued for five minutes under ether.

Next day she felt nicely and, contrary to advice and express injunctions, she got up, put on her clothes, and went about the house as if nothing had happened. The house was not heated by a furnace all over, and she went into cold rooms, exposing herself unwarrantably. Naturally enough, she took cold and was seized with chills and went to bed sick. She became bloated and swelled in the abdomen. It was thought she would come out of this, as her tem-

perature was under 100° F. for a fortnight and the pulse not much accelerated. She died six weeks after the operation. It was expected on a post-mortem examination to find a cyst puncture, and the leaking therefrom to have caused peritonitis. On the other hand, the autopsy disclosed no inflammatory or other pathological results about the sites of puncture, but a rent was discovered in the cyst, one inch in length, located on the side of the cyst opposite to the punctures.

Fibro-cystic rupture is rare and not necessarily fatal. This cyst must have ruptured about the time of the operation. Whether the latter had anything to do with the bursting, we cannot tell. But in the light of the experience, afforded by the other cases recorded here, it is felt that if she had remained in bed as she was told, and obeyed the injunctions of her physician, probably there would have been a good result. Under the circumstances, the death is not chargeable to the operation. The facts, up to her own foolhardy action, read like those in which the operation was successful. In all cases of this operation, the patient is undressed, put to bed, and *kept there till suffered to rise by the operator*. The time of lying varies in different cases, and its length must be determined by the systemic and local symptoms. Supposing the cyst had been ruptured by the introduction of the electrodes in this case, if she had kept still and quiet in her bed, her natural powers would probably have sufficed to have taken care of the effusion. The sad result of this case brought some bad reputation upon the operation with those who did not know all the facts.

CASE X.—Abdominal tumor; at first very hard; after two applications assumed a cystic form; regarded as improved; third operation followed by typhoid symptoms; neglect of ordinary care; death. Operator, Kimball.

Mrs. U., widow, 50 years of age in 1874; had one child. Resided in Rockland, Mass.

Presented a very hard abdominal uterine tumor. She submitted to *two applications* of the battery, and thought she was improved and the tumor diminished; she then returned home from the hospital and remained two months. There was no vaginal discharge. On her return, the tumor was found to have changed its character, became soft, and presented the physical signs of a monocystic fibroid. No pain; but she was troubled with the bulk of the tumor, and the fear that any one should know about its existence.

Third operation.—One application of the battery was made. Fluid of a sanguinolent character copiously exuded through the punctures. There was no chill and no fever. She lost her ap-

petite, and her case assumed a prostrated, typhoid aspect. Still she was able to return home in a short time. From the account received, she was neglected, as she foolishly refused to have a physician, until she was sinking and moribund, too far gone for any relief. She had the feeling that she would be better all the while. Her symptoms were those of septic poisoning. Death occurred fourteen weeks after the last operation. No one knows but that she might have been saved if she had received ordinary attention. The patient should remain under some professional oversight. It would have been better to have kept her in the hospital.

CASE XI.—Fatal case after a second application; relief from pain by the first application; severe peritonitis after second operation; death in eleven days; patient a morphia-eater—a circumstance that masked the symptoms that usually indicate a too large dose of galvanism. Operator, Cutter.

1876, August 4th, Miss F. C. C., spinster, resides in —, age 44, this day presented herself to have the operation of electricity performed upon a uterine fibroid. She was accompanied by Miss Tyler, Case XLVIII. She was a small, spare woman, quiet but determined in demeanor. She said the tumor had existed for eight years. Her relatives afterwards said ten at least. She stated that she was troubled much with pain and distress in the region of the bladder, and that such had been her suffering that she had been obliged to have recourse to the use of morphia during the whole period of the tumor's existence. At times she took a drachm-bottle of the sulphate of morphia per week. She was influenced by the fact of the relief that Case XLI. had experienced, and had made up her mind to try the same method, in the hope that her pain also would be removed, and she do away with the morphia. On examination, the tumor was found to be dense and multilobar. One large lobe blocked the pelvis, packed the vagina, and crowded the rectum. The uterus could not be detected. Eight or ten small, freely moving lobes could be readily felt in the abdomen. There was tenderness on pressure over the tumor. There were signs of chronic bronchitis.

The experimental character of the operation was fully rehearsed to her, and she expressed a full understanding of the dangers to be run. She insisted upon an early performance, and arrangements were made for her to go down to the seashore and have the operation with the benefit of the sea air. On August 12th, she went to West Falmouth, Mass., and bore the journey well.

First operation.—On the 14th, the battery was applied. She was fully etherized. One electrode was passed through the rectum into the tumor about four inches. The other electrode was passed into the most prominent lobe on the right of the navel. The current was very powerful and was continued for ten minutes. A triple dose of morphia was subcutaneously injected after the operation. The pulse did not vary much from 86

roughout. Afterwards there was pain and prostration. Hot fomentations of diluted alcohol were kept on the bowels. There was some vomiting, which was attributed to the ether. Appetite poor. But she insisted that the "*great pain*" had been abated, which caused her to be very well satisfied with the application. From the unusual length of the continuance of the prostration, the writer was not so well satisfied, and when importuned to repeat the application, put her off until August 24th.

Second operation.—One electrode was introduced through the rectum, and the other into a lobe further to the right of the level. There was some difficulty in penetrating this lobe, as it slipped away from the hold. The current was passed *ten* minutes. The pulse kept up to its normal rate, also the respiration, and there were no signs of collapse. The morphia, I think, masked the effect of so prolonged an application. *Five* minutes would have been quite enough. On awaking from the ether, there was considerable prostration and distress. There was no vomiting, so morphia was given by the mouth, and fomentations of alcohol, as before. August 29th. Pulse a little quickened. Laid and prostrated. Pain over the site of the abdominal puncture. On the 30th, a telegram summoned me to her bedside. She was found comfortable. She had experienced severe paroxysms of distress in the epigastrium and abdomen, that appeared to be very dangerous to life. She did not take much nourishment. Was swelled in the right epigastrium.

31st. Left her in charge of Dr. L. H. Luce. September 2d. Another summons by telegraph. No communication could be had before the 4th. Her pulse was 96, respiration 24, and she was comparatively comfortable. The bad symptoms of the 2d were slow and irregular breathing, lead-colored mouth and face, probably opium-poisoning, as, though a morphia-eater, she was taking morphia by the mouth, and laudanum by the rectum. There was a swelled and tender abdomen; the thorax was normal, except some coarse râles scattered here and there. Advised good nursing, rest from neighbors, beef-tea enemata, ice by mouth, and less morphia. She was left conscious and rational. Death occurred on the 8th. "Before death," Dr. L. writes, "there was universal tenderness, acute pain; pulse 120-130 and small, temperature 103-104°. Nausea and finally delirium. . . . The symptoms were, towards the close, of a typhoid character." There was no autopsy.

Remarks.—When the deep penetration of the abdominal cavity is considered, it appears remarkable that more deaths have not occurred before. It seems that the electrical current confers an apparent immunity upon these punctures. No inflammatory results were reported in General Kilpatrick's angio-matous tumor cured by a constant current. A certain percentage of deaths are expected in any severe operation. The

opium served to deceive the physician and the patient herself; it clothed her with a semblance of strength which was a genuine counterfeit. Still it hardly appears right to deny to a morphia-taker the chances of benefit of a given operation. But in such a case the history of the present instance teaches us to be very cautious and moderate in the length of time and frequency of the applications.

Finally, it teaches to never go against one's best judgment, simply to gratify the importunity of a patient.

(To be continued.)

A CASE OF CHRONIC INVERSION OF THE UTERUS OF TWENTY-ONE MONTHS' STANDING REDUCED BY COLPEURYSIS.¹

BY

W. W. JAGGARD, M.D.,

Professor of Obstetrics, Chicago Medical College; Obstetrician to Mercy Hospital.

HISTORY.—E. S., 36 years old; German; married at the age of 22 years; seven children, no miscarriages. Her first six confinements were normal. She was in the habit, common among the peasant women of Germany, of rising upon the third day and of making her own bed. In each of her labors, she was attended by a midwife.

Her seventh confinement occurred in October, 1884. According to the statements of the patient and attendant midwife, the delivery of the child was normal. The placenta was removed, as in the six former labors, by traction on the cord. During labor and the puerperium, no unusual loss of blood was observed, and the patient does not remember any extraordinary sensations of pain or faintness. The midwife consulted a physician on the second day of the lying-in period with reference to the high elevation of bodily temperature. On the same day, a well-known obstetrician saw the case. He made the diagnosis of puerperal fever, instituted the usual plan of treatment, but declined further connection with the case, as he feared the infection of his regular puerperal patients, of whom he had a large number. No examination of the uterus, either by abdominal palpation or vaginal exploration, was made. On the third day, an equally competent medical man inspected the patient, confirmed the diagnosis of puerperal fever, and gave directions with reference to treatment.

¹ Read before the Chicago Gynecological Society, Friday, November 19th, 1886.

He ordered the application of a blister to the hypogastric region, which relieved the local tenderness. He continued to visit the patient for eight days, when he pronounced her convalescent. The contour of the uterus was not investigated, either through the abdominal parietes or by the vagina. At the expiration of three weeks, the woman rose from her bed for the first time, when she observed a fleshy tumor protruding from the vulva. Seven weeks after delivery, she resumed her work as a washer-woman. She suckled her child fourteen months. During this period, painful coitus and the sensation of the presence of a foreign body within the vagina were the only symptoms which attracted her attention to her condition. She noticed no fluor, no hemorrhage, and felt no pain except during coitus. The sexual act was not attended by any perceptible loss of blood. On account of the two symptoms just mentioned, she sought medical advice, and professed relief from remedies, exhibited per os. The fleshy mass, situated entirely within the vagina, was supported by a large sponge.

The child was weaned in December, 1885. About March 17th, 1886, she experienced severe metrostaxis entirely without pain, and lasting six days. She supposed menstruation had been re-established, and gave the subject no further thought. About April 15th, another severe series of hemorrhages occurred, painless and lasting one week.

On May 28th, she came under the writer's observation, and was admitted into the wards of Mercy Hospital. She sought relief, as she very distinctly expressed it, on account of painful coitus, the sensation of the presence of a foreign body within the vagina, and the excessive loss of blood during her last two menstrual periods.

The woman was of medium size and height, with well-developed muscles and clavicles like a man's. She presented evidence of marked anemia.

DIAGNOSIS.—Bimanual palpation revealed a pyriform tumor—the size of a hen's egg—protruding through the os uteri. The base of the tumor rested on the pelvic floor, and upon coughing or straining appeared at the genital fissure. A shallow sulcus, between the pedicle of the tumor and the walls of the cervical canal, extending around the left semi-circumference of the canal, could be felt by the finger and traced with the sound. On the right side, no sulcus could be detected, and the membrane covering the tumor was reflected directly upon the external os. The long axis of the tumor was deflected to the left of the median line. The corpus uteri was absent from its normal position. The tumor, insensitive to pressure, was covered by a soft, villous membrane, and possessed the consistence of an edematous myoma. The enveloping membrane was of a bluish-red color, presented some spots of superficial ulceration, and bled upon the slightest touch. Tubal ostia were nowhere visible. Traction of the tumor downwards caused the sulcus on the left side to disappear en-

tirely, an important diagnostic sign of inversion of the uterus, to which Carl Braun,¹ Robert Barnes,² and Schroeder,³ in particular, have called attention. Reamy,⁴ of Cincinnati, has recently described a sign which might have furnished corroborative evidence at this stage of the diagnosis in the case under consideration. Reamy says that when the tumor, grasped by the fingers within the vagina, can be easily rotated on its vertical axis, it is probably a polyp, since such rotation could not occur to any marked extent in an inverted uterus, stiffened as it is by its muscular walls and the thick, strong, fibrous guy ropes furnished by the broad ligaments.

To make the differential diagnosis between inversion of the uterus and pedunculated fibroid positive, the patient was etherized. A sound in the bladder and a finger in the rectum were easily approximated above the tumor. The funnel-shaped cavity at the seat of inversion was easily recognized by the finger in the rectum and by the hand placed on the abdomen in bimanual palpation.

No appearances were present that would indicate the invasion of the uterine walls by any new formation.

TREATMENT.—On *a priori* grounds, the mode of taxis proposed by Emmet in 1866 seemed so simple and rational that I determined to give the plan as fair a trial as the conditions of the case would permit. Accordingly, while the patient was under the influence of ether, after the evacuation of the contents of the bladder and rectum, and the disinfection of the genital tract, the right hand was passed into the vagina,⁵ “and with the fingers and thumb encircling the portion of the body close to the seat of inversion, the fundus was allowed to rest in the palm of the hand. This portion of the body was firmly grasped and pushed upward, and the fingers were then immediately separated to their utmost; at the same time the other hand was employed over the abdomen in the attempt to roll out the parts forming the ring, by sliding the abdominal parietes over its edge.” At the expiration of forty-five minutes my right hand was almost powerless, and Dr. E. C. Dudley kindly relieved me. He gave up the attempt at reduction after thirty minutes’ trial, fearing perforation of the fundus. Apparently not the slightest progress in the reinversion of the organ had been made. Some hemorrhage occurred as the result of manipulation, although the fundus had been enveloped with absorbent cotton and gauze. The manœuvre was repeated on the following day under the same conditions, through the same period of time, with no more favorable results.

¹ “Lehrb. d. g. Gynäkologie,” Wien, 1881, p. 336.

² “The Diseases of Women,” London, 1878, p. 732.

³ “Handbuch der Krankheiten der Weiblichen Geschlechtsorgane,” p. 213, Leipzig.

⁴ AMER. JOURN. OF OBSTET., August, 1886, p. 814.

⁵ Emmet, “The Principles and Practice of Gynecology,” Philadelphia, 1884, p. 418.

Emmet's method was then abandoned for the following reasons: The separation of the fingers to their utmost had no effect whatever in the dilatation of the os externum. As pointed out by Fenger, and as brief reflection will convince the most casual observer, mere extension of the fingers can have but little effect in the dilatation of the cervix, owing to the relatively feeble character of the extensor muscles of the forearm. The necessary manipulation of the congested mucosa, even when protected by cotton or gauze, caused a loss of blood of moment in an already anemic woman. The uterine musculature had evidently undergone fatty degeneration, and there was serious danger of perforation. Finally, there was reason to entertain fear as to the patient's power to endure the shock from taxis and the effects of prolonged anesthesia.

Compression of the body of the uterus opposite to each tubal ostium, between the thumb and forefinger, so as to produce indentation of one side or the other, the Kiwisch-Noeggerath method, was equally ineffectual.

On Sunday, May 30th, acting upon the suggestion of Dr. W. H. Byford and Dr. Christian Fenger, I began an attempt to effect reinversion by colpeuryesis. After the evacuation of the contents of the bladder and rectum, and disinfection of the genital canal, the colpeurynter was introduced while empty so that it lay on the posterior wall of the vagina, and the fundus uteri was adjusted so that the long axes of the uterus and the pelvic inlet were coincident. The bag was then injected with water until it was fully distended. The patient was confined to her bed in the dorsal decubitus. The instrument was removed at the expiration of twenty-four hours, and the genital canal disinfected. A bacillus, containing thirty grains of iodoform, was placed in the vaginal cul-de-sac, and the colpeurynter, after being cleansed, was reintroduced. Colpeuryesis was continued in the manner indicated without interruption until June 9th. Very gradually the sulcus between the pedicle of the tumor and the neck of the uterus deepened until, on the eleventh day, the organ was so far reinverted that the fundus was on the same plane with the os externum. During this period, gentle efforts at taxis were made daily, but without any apparent effect.

No perceptible progress was made during the following eight days. On June 17th a serous discharge tinged with blood began to escape from the vagina, and it was thought the patient was about to menstruate. The colpeurynter was accordingly withdrawn. During the nights of June 18th and 21st, the patient suffered severe metrorrhagia, which threatened to prove immediately fatal. Hot vinegar was used as a vaginal douche, but did not prove so efficient a styptic as a hot saturated solution of alum. Menstruation ceased on June 23d. On account of the hemorrhages, it was deemed inexpedient to expose the patient to the fatigue consequent upon any attempt to observe the mucosa during menstruation. During the subsequent nine days I was in-

disposed, so that the treatment was resumed on July 2d. On examination, before replacing the bag, the inversion was found to be as complete and as irreducible as on the day the treatment began. The uterus was gradually reinverted as before until, on July 8th, the fundus was on the same plane with the os externum. From the 8th until the 15th of July, no apparent progress in reduction was effected. On the evening of July 16th, I was very much pleased to find the uterus completely reinverted, and the vaginal portion of the cervix restored to a relatively normal position. The sound passed into the uterus to the extent of three and one-half inches. The corpus uteri was felt, on bimanual palpation, in a position of slight retroversion, below the sacral promontory. The patient was not aware of any change in her condition. She said, however, that she had felt a sudden, sharp pain in the hypogastric region (*Unterleib*) some four hours prior to the examination. Owing to her enfeebled condition, due in the main part to anemia, she was not permitted to leave her bed until July 18th. The colpeurynter was in the vagina altogether thirty-three days. On three occasions during this period the bodily temperature rose to 102° F., but invariably fell to the normal after vaginal irrigation and disinfection of the rubber bag. The presence of the colpeurynter in the vagina did not interfere at all with the functions of urination and defecation. The writer desires to express in words his appreciation of the constant attention devoted to the somewhat tedious treatment of this case by Dr. L. E. Lawson, late resident physician, Mercy Hospital.

Dr. Alex. J. Stone, of St. Paul, kindly repaired the extensive bilateral laceration of the cervix on July 20th. The operation was unusually difficult on account of the extent of the tear and the shortness of the vaginal portion. Dr. Stone's method of operative procedure differs materially from Emmet's, but its description is obviously out of place in the present report. The sutures were removed on August 4th, perfect union having been secured.

The patient, after leaving the hospital, gained rapidly in strength. Menstruation occurred September 26th; the process was painless, lasted four days, and the quantity of blood lost was normal. At the time of writing, she has resumed her former occupation.

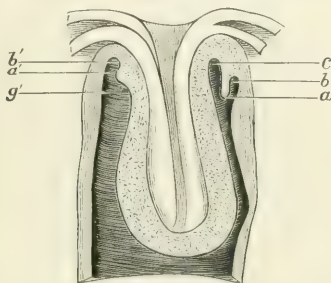
The case is of particular interest with reference to I., anatomy; II., symptoms; and III., treatment.

I. ANATOMY.—The uterus was in a state intermediate between the second and third degrees of chronic inversion.

In the second degree of inversion, the incomplete inversion of Puzos, Levret, Leroux, Denucé, the third degree or perversion of Crosse, the anatomical limit of inversion has been indi-

ated by Baudelocque¹ as the vaginal insertion around the cervix uteri. Under these conditions, according to Veit, Freund,² and Carl Ruge,³ the cervical canal is intact, the uterus is only inverted as far as the internal os, and the uterine globe remains within the vagina. It may not be amiss to say right here that the term internal os, when used in relation to the puerperal uterus, in the present confused state of our knowledge, expresses a very vague and indefinite notion. It is presumable, however, that the ring of Müller is indicated by the use of the word in this connection.

In the third degree, the complete inversion of Puzos, Levret, Leroux, the utero-vaginal inversion of Denucé, the corpus



Schematic transverse section of uterus and vagina. *a, a'*, external os; *b*, cervico-vaginal sulcus, left side; *b'*, cervico-vaginal sulcus, right side; *c*, cervico-uterine sulcus, left side; *g'*, cervico-vaginal sulcus, right side.

uteri and cervix uteri are completely inverted, and the anatomical limit, as indicated by Levret,⁴ is the vaginal insertion at the vulvar orifice. Under these conditions, the inverted uterus is also prolapsed, and protrudes beyond the plane of the genital fissure.

In the case under discussion, the cervical canal was completely inverted on the right side, the cervico-uterine sulcus

¹ Denucé, "Traité Clinique de l'Inversion Utérine," Paris, 1883, p. 169.

² Billroth-Luecke, "Handbuch der Frauenkrankheiten," Bd. I. H. Fritsch, "Inversio Uteri," Stuttgart, 1885, p. 868.

³ Schroeder, "Handbuch der Krankheiten der Weiblichen Geschlechtsorgane," p. 209.

⁴ Denucé, "Traité Clinique de l'Inversion Utérine," p. 171.

(Denné) had disappeared, the cervico-vaginal sulcus was shallow.

On the left side, the cervico-uterine and cervico-vaginal sulci were perfectly distinct. In consequence of the complete inversion of the right half of the cervix, the long axis of the uterus was deflected sensibly to the left of the median line. The vaginal portion of the cervix was short, and lacerated on either side to the vaginal junction. The inverted uterus was perfectly mobile, and no trace of inflammatory infiltration could be detected about the pelvic peritoneum or in the connective tissue. The relations of the ovaries, tubes, and round ligaments could not be mapped out with any degree of certainty.

II. SYMPTOMS.—I think it is fair to assume that the inversion of the uterus, in the case under discussion, occurred at the time of delivery. The weight of probable evidence is in favor of this assumption. The inversion must have occurred before the third week following labor, because at that time the presence of an intravaginal tumor was discovered by the patient herself. This interval of three weeks was spent quietly in bed in the dorsal decubitus. During this period, no cause adequate to such a result was in operation. On the other hand, during or at the completion of the third stage of labor, all the causes and conditions known to be necessary to the production of inversion were present, *i. e.*, the enlarged and relaxed corpus, dilated cervix, traction on the cord; possibly, also, the fundal insertion of the placenta (Henning), and paralysis of the placental site (Rokitansky).

If this assumption be granted, the case demonstrates that inversion of the uterus may "take place without sufficient symptoms to attract attention or to indicate that anything has gone wrong." Dr. J. C. Reeve has called attention to this subject and has sustained the proposition just quoted, by the citation of well authenticated cases, in his classical essay,¹ "Moot-points in Regard to Inversion of the Uterus."

The patient herself, a woman of at least average intelligence and the midwife, a qualified practitioner, *i. e.*, examined and registered by the State Board of Health of Illinois, observed no symptoms sufficient "to attract attention or to indicate that any

¹ "Transactions of the American Gynecological Society," Vol. 9, 1884, p. 83.

thing had gone wrong" at the time of delivery. A well-known and skilful obstetrician saw the case forty-eight hours after the probable time of the occurrence of the accident, and the absence of symptoms was so marked that the condition escaped his critical observation.

Seventy-two hours after the probable time of occurrence of the accident, the patient was seen by another thoroughly competent medical man, who also failed to recognize the complication upon his first or upon any subsequent visit.

Dr. Reeve's proposition has an important bearing upon the differential diagnosis between inversion of the uterus and sessile polypus, and indicates that no reliable evidence can be obtained from the history of the case. As remarked by Dr. Reeve,¹ "An inversion of the uterus may have occurred at the last labor, and caused no symptoms of moment. The only safe clinical rule is to hold that a vaginal tumor may be an inverted uterus, whatever the history, condition, or circumstances of the patient."

The history of the case illustrates, not only the absolute importance of external manipulation of the uterus during the third stage of labor and the early hours of the puerperium, but also the necessity of critical examination of the contour of the organ from day to day during the lying-in period in every case of labor. I have ventured to call attention to this trite subject, because I am under the impression that the importance of this rule—imperative on other grounds—is not fully recognized in practice. Had the physicians in attendance upon this case made the most cursory examination of the abdomen by palpation, the inversion could scarcely have escaped detection.

III. TREATMENT.—Carl Braun,² in 1851, introduced a simple, convenient, and safe method of the vaginal tamponade (colpeuryesis) by means of a caoutchouc bag (colpeurynter). The reduction of chronic inversion of the uterus by colpeuryesis was inaugurated by a communication from Tyler Smith to the Royal Medical and Chirurgical Society of London, April 13th, 1858. In this communication, Tyler Smith reports the reduction of a chronic inversion of the uterus by taxis, in conjunction with continuous, elastic pressure by means of Gariel's air-pessary. Barrier,³ of Lyons, in 1862, employed an air-pessary to retain

¹ *Ibid.*, p. 85.

² "Lehrb. d. g. Gynäkologie," Wien, 1881, pp. 563, 718.

³ Denucé, "Traité Clinique de l'Inversion Utérine," pp. 327, 371.

the uterus in position, but with no avowed intention of using continuous, elastic pressure to effect reduction, as intimated by Denucé. M. P. Teale, Jr.,¹ of Leeds, and West,² effected reductions of the inverted uterus in 1859 by Tyler Smith's method. It was reserved for Böckenthal,³ as remarked by Thomas,⁴ to demonstrate in the same year that reduction could be effected by colpeuryesis, unaided by taxis.

Dr. W. H. Byford⁵ clearly describes the mode of action of the colpeurynter in cases of chronic inversion of the uterus in the following words :

"When the bag is of the right size and form, the uterus is pressed upward in such a manner as to place the vaginal attachments upon the stretch, and cause them to draw open the cervical cavity, and this tension is increased by the dilatation of the upper portion of the vagina in every direction. It thus acts as a dilator as well as a repositor, and although the degree of pressure upward is not so great as may be made by the repositor of Dr. White, or by the hand, its steadiness of action and the great length of time it may be continued more than compensate in the end for its lack of violent force."

The mechanical irritation of the uterine musculature by the bag induces contractions of the corpus and the round ligaments. The volume of the inverted organ is diminished, while, at the same time, the shortening of the round ligaments actively assists in some degree in the process of reinversion. In the case described, the chief resistance to reduction was offered by the volume of the uterine globe. The cervix was dilated with comparative ease, and, so far as could be ascertained, no adhesions existed within the funnel of the inverted organ. I am, accordingly, inclined to attach considerable significance to the irritant action of the bag upon the muscular substance of the uterus.

As a matter of practical import, the colpeurynter used was a quadrilateral caoutchouc bag, 10 cm. long, 5 cm. wide, and possessing a maximum circumference, when distended, of 21 cm. It is known in the shops as "No. 5, pear-shaped water-pessary."

¹ Medical Times, Aug. 20th, 1859.

² *Ibid.*, Oct. 29th, 1859.

³ "Zeitschr. f. Geburtskunde," Vol. xv., p. 313.

⁴ "A Practical Treatise on the Diseases of Women." Philadelphia, 1880, p. 466.

⁵ "The Practice of Medicine and Surgery Applied to the Diseases and Accidents Incident to Women," Philadelphia, 1881, p. 423.

The matter of selecting a properly shaped and a properly sized bag deserves some attention. I have seen intolerable pain and distressing vaginitis caused by the introduction of the colpeurynter devised by Carl Braun for use in cases of placenta previa.

Byford's treatise is the only American text-book on gynecology that gives an adequate exposition of colpeurynter as one of the methods of reduction of chronic inversion of the uterus. This fact may be interpreted as indicating that the method is not popular in the United States. A survey of American journal literature upon this subject will serve to confirm such an opinion. In the very large majority of recorded cases, more or less heroic measures have been adopted.

On the other hand, colpeurynter has largely replaced other methods in Germany. Thus, Schroeder¹ has repeatedly effected the reduction of chronic inversion of the uterus by colpeurynter after the failure of all efforts at manual reposition. Rheinstaedter² says: "The best method of treatment of chronic inversion is the introduction of a colpeurynter, which is gradually distended with cold water." In a similar strain, Fritsch³ remarks: "Gradually almost all gynecologists have gone over to Braun's colpeurynter." "The treatment with the colpeurynter is the sovereign method of treatment in cases of inversion of the uterus. Inversions yield to it which have resisted all other methods. The resistance which the cervix opposes may be so great that Muzeux⁴ forceps (four), inserted into the portio, tear out, and still the uterus remains unmoved. If colpeurynter is now resorted to, earlier or later a successful result is bound to follow without the application of violence and without danger. It is, therefore, urgently advised to give up every attempt at forcible reposition of the uterus." He adds the significant sentence, "Colpeurynter cannot be held as without effect, even if the end is not immediately attained; it may be continued with interruptions fourteen days, yes, even three weeks."

¹ "Handbuch der Krankheiten der Weiblichen Geschlechtsorgane," p. 215.

² "Praktische Grundzüge der Gynäkologie, Berlin, 1886, p. 163.

³ Billroth-Luecke, "Handbuch, etc." H. Fritsch, "Inversio Uteri," p. 877 et seq.

⁴ An allusion to one of Schroeder's procedures.

A CASE OF INVERSION OF THE UTERUS WITHOUT
CONSTITUTIONAL SYMPTOMS.

BY

J. C. REEVE, M.D.

IN the paper read before the American Gynecological Society [Transactions, vol. IX.], to which Dr. Jaggard alludes in the preceding paper and from which he quotes, I adduced considerable evidence to show that the accident of inversion of the uterus, usually marked by the most striking symptoms, may occur with so little general disturbance as to pass unrecognized. Dr. Jaggard's case is strong, and, indeed, conclusive evidence upon this point.

Since reading that paper before the Gynecological Society, I have met with the record of another case of the kind of the most positive character, and it is now presented as an appropriate continuation of the subject, and one which, with Dr. J.'s case, will close all discussion of this point hereafter.

It is taken from the *Cincinnati Clinic*, of June 5th, 1875. For the benefit of those who did not know Dr. Wright, it may be said that he was for many years Professor of Obstetrics in the Medical College of Ohio, and was a man of very high professional standing.

"Dr. M. B. Wright said that he had been called that afternoon to attend a lady in confinement; the labor was a brief one, the child being expelled in a few minutes after he arrived. On placing his hand over the hypogastrium, the globular body of the uterus could not be detected. He then ran his hand down to the vulva where he found the uterus inverted, with a very large placenta firmly adherent to the fundus. He then separated only a portion of the edge of the placenta, lessening considerably the volume of the mass, and returned it to its natural position. A short time afterward he again found the fundus and placenta at the vulva. He then peeled off the placenta, returned the uterus, and this time it remained. The doctor could not account for the occurrence of the inversion, as the cord was long and was not surrounding the child, nor had any traction been made on it in the endeavor to remove the placenta, for at the time he discovered the situation of affairs, he was just turning to attend to the delivery of the latter. There was in this case no fright, no exhaustion, and the pulse did not exceed ninety; the patient knew

nothing about the accident. The doctor's experience with these cases had been that the uterus is more likely to be retained in its position after the placenta has been removed than if it be returned with that organ adherent. In this case, he did not tear it off the first time because of the very firm adhesion, but when it failed to keep its position, he adopted the mode which had been the most successful in his hands. There was some little hemorrhage from the denuded uterine wall, but it was not dangerous in amount."

A CASE OF CHRONIC SALPINGITIS; TUBO-OVARIAN CYST,
ACUTELY INFLAMED. HEMORRHAGE INTO THE CYST.
OPERATION. RECOVERY.

BY

J. W. ELLIOT, M.D.,

Assistant Surgeon at Free Hospital for Women; Surgeon to Out-Patients at Massachusetts General Hospital, Boston.

On May 16th, 1886, I was asked by Dr. Worcester, of Waltham, to see a patient with pelvic inflammation, who was not doing well.

Mrs. S., aged 39 years, had been married twenty years. She had always been well before marriage. One year after marriage, she had a child. During this pregnancy, she suffered from a pain in her right side. After the child was born, she was sick in bed for several weeks. She thought that a part of the after-birth did not come away immediately, but gradually sloughed out, causing a very disagreeable white discharge. Since then, she had never been well. During the next two or three years, she had two miscarriages. She said she had "had womb trouble for ten years," and had been treated by several doctors, one of whom told her that she had "catarrh of the womb." Within the last four years, she had had three severe hemorrhages, which occurred at intervals of about one year. Otherwise the catamenia had been regular, but profuse. For the last ten years, she had been disabled during menstruation. She had pain in the back before the flow began, pain across the abdomen during the first two days, and tenderness several days later. Her right side had always troubled her, and whenever she took cold it was especially tender and painful. She had had a white discharge ever since her marriage, and for ten years had had occasional (six or eight in all) attacks of pain in the lower abdomen, accompanied by a discharge from the vagina of very offensive matter.

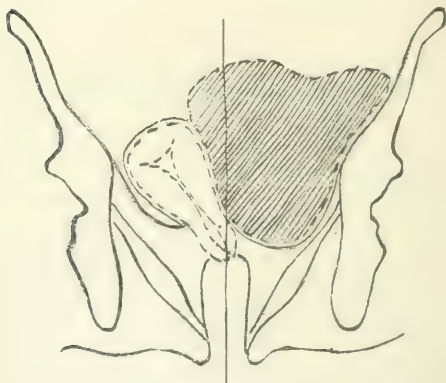
About three weeks before I saw her, she had taken cold, while

at work in the garden, during menstruation. She then began to be very tender across the lower abdomen, and to flow profusely, and soon became feverish and quite ill. On May 1st, Dr. Worcester was called, and found pain and tenderness in the right groin and iliac fossa, also in the right hypochondrium, with some resistance on pressure. Temperature 100° F., pulse 100. He ordered poultices, hot douches, and morphine. A week later the vaginal discharge became very offensive, the pain and tenderness were increasing, and the temperature was gradually rising.

On May 15th, condition unchanged.

When I saw her on May 16th, she had a yellowish-white color, and seemed to be quite ill. The temperature was about 100° F.

FIGURE I



She had a profuse bloody discharge, which was extremely offensive in spite of frequent douches. On examination, I found a fluctuating tumor, which filled the right side of the pelvis, extending two inches above the pubes. This tumor was tender, but movable within certain limits, and seemed to extend towards and to cling to the right side of the pelvis. The uterus could be felt small and hard, pushed somewhat to the left and slightly backwards, but entirely separate from the tumor. See Fig. 1.

Dr. Worcester had examined the day before, and had found no tumor. Its growth must therefore have been rapid. The general appearances were very suggestive of a pelvic abscess, but the very bad smell of the blood discharged led me to think that it must have been retained somewhere before it appeared in the vagina.

As the uterus was small and hard, it seemed to me to follow that the blood must come from the Fallopian tube, where it was retained, and formed the tumor which I had felt, but was slowly leaking out through the uterus and vagina.

I confirmed Dr. Worcester's diagnosis of pelvic inflammation, and gave my opinion that the tumor was probably a pelvic abscess, but that it might be a hemorrhage into the Fallopian tube. I advised waiting a day or two, and carefully watching the course of the disease, with preparations for an operation at short notice. The next day, I was notified by Dr. Worcester that the

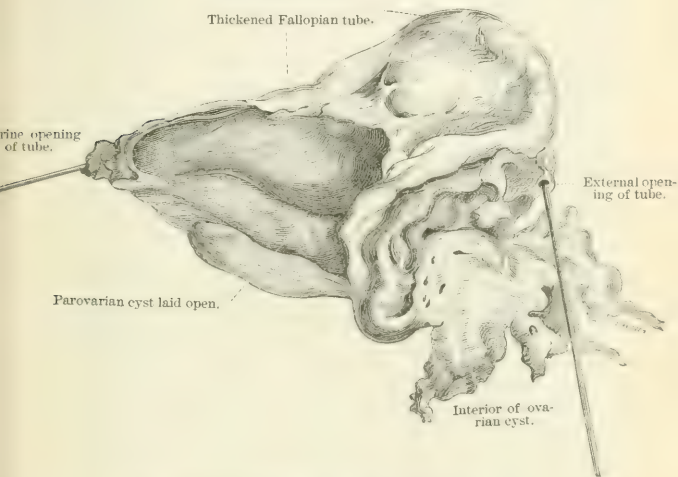


FIG. 2.—Chronic salpingitis, tubo-ovarian cyst, parovarian cyst.

temperature was higher, and that the patient was not so well, and was asked to come out prepared to do what was necessary.

On May 18th, the following day, I found the temperature $102\frac{1}{2}^{\circ}$ F., the pulse 120. The tumor had almost doubled in size in two days, and could be plainly felt, extending nearly up to the umbilicus. The foul discharge of blood had almost entirely stopped. It was very noticeable that the tumor as it grew still hugged the right side. My previous suspicion of hemorrhage into the Fallopian tube seemed to be confirmed by this rapid increase in size. But this increase might also occur with an abscess, and the high temperature certainly suggested pus formation. I was in great doubt whether it was best to aspirate and

drain the tumor per vaginam, or to do laparotomy at once. Dr. Worcester favored laparotomy, and suggested that the stinking discharge would make the vagina a septic field of operation.

I decided to do laparotomy, believing that I had a Fallopian tube to deal with, but thinking that if it should turn out to be an abscess, I could drain it the more thoroughly from above and below.

The operation was done in a small kitchen. Although I had brought my instruments, the operation must be regarded as an emergency operation, as I was not prepared for such a very serious affair as it turned out to be. Drs. Cutler and Worcester most kindly and skilfully assisted me. A nurse from Dr. Worcester's training school etherized. We had corrosive sublimate and carbolic. The kitchen was very clean, and we used the cooking utensils for our antiseptic solutions.

On opening the abdomen, we first encountered a cyst of the broad ligament as large as a cocoanut, which I emptied with a trocar. Then I found a large, thick-walled, semi-fluctuating mass filling the right side of the pelvis and part of the abdomen. This mass had no sign of a pedicle, but seemed to grow flat out of the pelvic wall. Its removal seemed to me an impossibility. However, I pulled up the uterus, and ligated the right broad ligament. While doing this, I saw that the Fallopian tube formed a part of the tumor. I began then to tear up the mass in every direction with my finger nails. Finally, with three fingers deep in Douglas' fossa, I succeeded in getting below and behind the tumor. It then began to peel out; but at this point it ruptured, and we were deluged with a stinking mixture of blood and pus, its contents. This being sponged away, I proceeded to forcibly tear the tumor out. I found at length that the Fallopian tube formed the pedicle. There was very little bleeding. The adhesions were very dry and tough, evidently of long standing. The laceration of the parts was very extensive. The peritoneum was stripped off the whole side of the pelvis, and the deep cellular tissue was opened and lacerated in various places. The whole broad ligament was removed with the mass. Part of the cyst came away in shreds, and small portions were left sticking to the pelvic wall. After sponging out, a glass drainage-tube was placed in the pelvis, and the patient put to bed. The operation was begun after 4 o'clock in the afternoon, and lasted two hours. The mass removed proved to be a most interesting specimen. It was the right Fallopian tube, very much *thickened* and elongated (hypertrophied), *only slightly dilated*, full of pus and blood, and glued to a suppurating ovarian cyst, forming the so-called tubo-ovarian cyst. There was also a cyst of the broad ligament. Fig. 2.

Under Dr. Worcester's most excellent after-treatment, the patient recovered rapidly. The temperature rose to 101° F., and fell to normal on the third day, when the drainage-tube was re-

moved. There was no vomiting, and no morphia was given until the third day.

Dr. R. H. Fitz, Professor of Pathology at the Harvard Medical School, kindly furnished me with the following minute description of the specimen:

DEAR DOCTOR ELLIOT:—The further examination of your specimen resulted as follows: The Fallopian tube was dilated, tortuous, and elongated to the extent of nearly six inches. Its wall was in general at least one-eighth of an inch thick, and in places, corresponding with the beginning of the varicosities, nearly twice as thick. The thickened wall was dense and white, the mucous and middle coats being fused. The inner surface was rough, injected, of a grayish-brown color, with specks of red and snuff color.

The outer end was intimately connected with a sacculated cyst as large as a small orange. There was no sharply defined line of demarcation between the two, nor were fimbriæ to be seen. The cavity of the cyst and the canal of the tube communicated by an opening about one-eighth of an inch in diameter. The wall of the cyst was thick and dense, intimately connected with the tube and the broad ligament. Its inner surface was in part smooth, injected, and hemorrhagic, in part with numerous minute depressions, in which were soft yellow plugs. Elsewhere a reticulated appearance was seen. The wall presented here and there tough, opaque, gray, intimately adherent patches, while elsewhere partly attached fibrinous masses were found. The wall was abundantly cellular and injected, but no epithelial structure could be recognized. In tearing the cyst from the broad ligament, the wall of the former was torn into, and found to contain a flat clot one-third of an inch in diameter. It lay in a cavity, to the walls of which it was intimately adherent. The microscope showed at the border line abundant large fatty degenerated cells, but no characteristic structural details. The surrounding tissue was fibrous, provided with large and tortuous vessels, but with no absolute evidence of the structure of an ovary. Between the layers of the broad ligament was a thin-walled cyst, collapsed, perhaps as large as an orange. Its wall was smooth, shining, easily isolated. It was lined with a cylindrical epithelium.

The diagnosis is as follows:

Chronic salpingitis; tubo-ovarian (?) cyst, acutely inflamed
parovarian cyst. [Signed] R. H. FITZ.

MAY 20TH, 1886.

From the history of the case and the appearances of the specimen, it seems that the salpingitis must have existed for at least ten years (its origin being uncertain). Its course was chronic, as evidenced by the absence of acute symptoms and by the enormous thickening of the walls of the tube. The tube became glued to the ovary, and formed with it a thick-walled

cyst, which contained pus. Its contents were occasionally discharged through the uterus. On taking cold during menstruation, this tubo-ovarian cyst became acutely inflamed, giving rise to pain, fever, and finally to hemorrhage. At first, the blood trickled out through the tube, uterus, and vagina; later it was partially retained, causing distention of the cyst; finally it was almost entirely retained (probably on account of swelling of the tube), giving rise to rapid and extreme enlargement of the cyst and to alarming symptoms.

The case is, I believe, unique in more respects than one. I have been unable to find another recorded case where the external appearance of blood has led to the diagnosis of hemorrhage into the tube. This extreme thickening with only moderate dilatation of the tube is also uncommon.

The result of the operation was a singular confirmation of the diagnosis, in that the two conditions suggested (pelvic abscess or hemorrhage into the tube) were found to exist in combination.

RETROVERSIO-FLEXIO AND A NEW INSTRUMENT FOR REPOSITION OF THE UTERUS.

BY

JOHN ALEX. MILLER, M.D.,
San Francisco.

MOBILITY of the uterus is a physiological truth which requires no further proof than to mention the fact that, with healthy surroundings in a digital examination, the uterus fairly dances on the examining finger. It also changes position in retching, breathing, singing, walking, and in all violent movements. It is not hindered nor restrained in this movement by this or that ligament, and the several peritoneal folds scarcely deserve the name of ligaments, because they support or tie down nothing, and this is also true of the round ligaments, which are now attracting so much notice in Alexander's operation.

The gubernaculum testis in the male is a similar membran-

ous process from the filamentous tissue of the scrotum; it is analogous to the round ligament, which arises from the labium to be attached to the uterus of the female. That this ligament has nothing to do in fixing the uterus in its normal anteverted position is proven from many facts which occur in daily practice. The insertion or origin, whichever you choose to call it, of these cords at the groin is somewhat irregular and sometimes so rudimentary that it cannot be found upon a most careful and tedious dissection. It may be found divided into a number of processes, one being connected with Poupart's ligament in the inguinal canal, the other being lost in the labia majora, and another traced to the sheath of the rectus muscle.

If these cords were so important, as the advocates of the Alexander-Adams operation try to make us believe, in binding the uterus forward, and, as I am recently informed, have a strength equal to supporting four and one-half pounds weight (Wm. M. Polk, *The Medical Record*, 1886, July 3d), a great deal of uneasiness, if not actual pain, would be felt and located along the inguinal canal, following this structure to its points of insertion, in sudden dislocations of the uterus backwards. This is, however, not the case; when sudden painful symptoms arise, they are invariably referred to the sacral region. The round ligaments consist of areolar tissue, vessels, and nerves, and a few white muscular fibres. In sudden retroversions, as in the pregnant uterus, occurring accidentally, or those retroverted or flexed uteri which are so often met with in a state of subinvolution after confinements, there are no symptoms pointing to a tension of these cords, but symptoms pointing to uterine pressure can be precisely located, and then disappear as soon as the offending member is put right.

If we could convince ourselves that the round ligaments were the normal support, then the operation of dissecting up these structures, drawing them out or rather the uterus forwards, would be an ideal surgical expedient worthy of imitation.

The uterus retains its normal anteverted position by the same force which keeps it in an abnormal or retroverted state, that is, first in order, intra-abdominal pressure, and the gravitation of its own weight. I hold with Pirogoff, who demonstrated the unimpregnated uterus in a frozen vertical mesial section to be in its normal position when anteflexed, the fundus of the womb resting on the bladder when the latter is empty, like in a

saucer, and when the bladder, is filled, then moving a little upwards and backwards; hence the impossibility of giving the exact angle which the long axis of the uterus makes with the horizon when a woman is in the erect posture.

According to Schultze, the long axis of the uterus is nearly parallel to the horizon, and he is certainly nearer right than that school which places the long axis of the womb in correspondence with the axis of the superior strait, or with an imaginary line which passes from the umbilicus downwards and backwards, falling on the coccyx.

Next in order for the retention of the uterus is the integrity of the pelvic floor. The pelvic floor being made up of the bladder, vaginal walls, rectum, connective tissue, and perineum, has a cleft through which the child is born, and it is this very process of parturition which frequently destroys this integrity, either by permanent distention of the vaginal canal, a partial prolapse of its walls, or lacerations in other of its anatomical structures. If the female pelvic floor be viewed as an architectural whole, we have the uterus as a keystone, and there is no possibility of its falling when its adnexa are in situ. But when the uterus does prolapse from a defect in the floor, then the reparation of the pelvic floor, the perineum inclusive, will require first attention. This, however, is quite a different question, and I want to keep it separate and distinct from the inclination of the uterine axis; with this the pelvic floor, no further than being the substratum on which the uterus rests, has nothing to do, and the round ligaments even less. The uterus falls forwards or backwards by its own weight and by gravitation, and is kept there by the superposition of the abdominal viscera pressing it down.

In diagnosing and designating a malposition of the uterus, with a view to successful treatment, it is necessary to trace each particular case to its special cause.

That which was at one time considered pathological is now established to be physiological; such is the anteversio-flexio or the normal anteverted flexed position. This is only pathological when the body and cervix are doubled on themselves, resulting from disease of the organ, which relaxes its tissue so as to make it too soft to support its own weight, like a wilted cabbage plant that droops from lack of moisture. Mechanical support from the various pessaries are in these cases worse than

useless, the disease which caused this atony must be cured, and then the anteflexion will disappear. In other instances, the cause is cicatrization of the utero-sacral ligaments, drawing that portion of the cervix where it joins the body back; here and in other anteflexions resulting from inflammatory processes pessaries are also worse than useless. Retroversio-flexio, on the other hand, offers a large and a *thankful* field for orthopedic gynecology. The long axis of the uterus in retroflexion is in an opposite direction to the normal axis, and while one finds the uterus now and then in this abnormal position without giving rise to any symptoms which give the slightest clue that the retroverted or flexed uterus does any mischief, this neutrality is certainly the exception; the rule is, that it is often the exciting cause of a long series of pathological processes which cannot be relieved until the organ is placed where it naturally belongs.

It is not necessary to draw a line between retroversion and retroflexion; clinically there is no difference, neither are the symptoms indicative of this modification worthy of a separate classification. Most versions after a few weeks or months become flexions, owing to the cervix being more or less fixed in the fornix of the vagina; the fundus, when once in a posterior inclination, will necessarily gravitate lower and lower down the sacrum from its own weight and from intra-abdominal pressure, thus inducing a flexion as the natural consequence of a version.

The uterus can be artificially retroverted and even flexed, and readily replaced in the healthy non-puerperal woman, in most instances, without pain or inconvenience.

As to the pathology of retrodeviations, I will quote the very brief and simple classification of Prof. Saenger:

(1) Such cases which occur in virgins and nulliparæ, inclusive of congenital and those which were acquired in puberty; also those of traumatic origin, after a fall, jump, etc.

(2) Cases that are referable to childbed and which are the most numerous.

(3) Cases which are complicated by pelvic peritonitis, cellulitis, cicatrization of the vagina with fixation of the uterus.

(4) Cases that are complicated by swellings or tumors in the uterus itself or in the surroundings. The therapeutical indications will depend in a great measure, in every instance, upon our capacity to diagnose each case of retrodeviation, so as to

assign it to its proper pathological group. When this has been done, the next step will be to ascertain whether the uterus can be dislodged or displaced, or is tied down by inflammatory adhesions. In the latter case, the strength and extent of the adhesions must be tested, for if they be slight and recent, they may be lacerated, care being taken that not too much force be used; rather trust to future treatment to loosen the adhesions, for a violent pelvic inflammation may result if the attempt at replacement be too forcible. Where the organ is firmly fixed, the hot-water irrigations offer some hope of stimulating absorption, so that reposition may be effected later. There is, however, a large class of patients in whom the fixation and suffering continue in spite of all medication; the life of the woman is miserable, and often threatened by the recurring cellular or peritoneal inflammation. Here we must adopt one of two expedients, *either* castration, which will induce the artificial climax, and thus cause atrophy of the offending organ, (A. Hegar, "Geschlechtskrankheiten mit Nervoeseu Leiden und die Castration wegen Retroflexio," *Wiener Medizinische Wochenblatt*, 1880, Nos. 19 and 20) or perform laparotomy on the patient, detach the uterus carefully from its posterior adhesions, draw it upwards and forwards, anteflex it, sewing it into the inferior angle of the abdominal wound; this is after the manner of Koeberlé, P. Müller, and Höning (Schroeder, "Frauenkrankheiten," 1884, Berlin). Schultze's forcible reposition, where he first dilated the cervix so as to make the uterine cavity accessible for his finger, and then forcibly tore the adhesions and anteverted the uterus, is certainly much more hazardous than laparotomy carefully and artistically carried out (*Centralblatt für Gyn.*, 1879, No. 3. "Statistics in Retrodeviations"). Paul F. Mundé (*AM. JOUR. OF OBST.*, October, 1881) gives in 700 gynecological cases 108 retrodeviations, which is as 1 in $6\frac{1}{2}$, or $15\frac{1}{2}$ per cent; this is the minimum. Winekel gives the percentage as 19, and other reliable authors are even higher. The recent puerperal and also accidental retroversions and flexions, which were induced through a fall, jump, and the like, are easily replaced, and when sufficiently anteverted, remain in their normal position without any mechanical support.

Before entering upon the exposition of my method of replacing the retroverted or retroflexed uterus, I will call attention to an important distinction both in cases and in the means

of reduction. I mean *retroversio uteri gravidi* and the method given by Hart and Barbour in their manual of gynecology; it is the best in my judgment and is as follows: The patient is placed in the genu-pectoral posture, a vulsella is fastened into the anterior lip of the cervix, while with the index finger of the right hand per rectum the fundus is pressed towards the bladder, and the cervix by means of the vulsella is drawn a little down, backwards, and then upwards.

For the reposition of the unimpregnated uterus, a great many varieties of uterine repositors have been devised from time to time. These consist of an intrauterine stem from two to three inches long, joined to a handle by means of a hinge-joint so as to permit motion in two directions, forwards and backwards; the Sims repositor has at the joint a toothed narrow cylinder, which is fixed at pleasure by means of a slide controlled at the handle of the stem, giving the operator the power to give the intrauterine stem any inclination. If I may judge from the extent of its popularity, it must be the most perfect of its kind, but, like all jointed instruments and sounds, after being introduced for work, and the handle pushed backwards in order to rotate the body of the uterus forwards, the intrauterine stem, which is the *lever*, has no *fulcrum* against which the force necessary for a replacement acts; this fulcrum would have to be about half an inch above or from the joint. It is very clear, that the fulcrum on which the lever turns in Sims' repositor is the loose and often inflamed tissue around the cervix, and which very often does not give the necessary resistance required of a fulcrum for the force that is necessary to bring about the rotation; for this reason it and its kindred are not only physically impracticable, but often very dangerous instruments to use. It must be remembered that at the joint is the power which must not be mistaken for the fulcrum. That an expert who has had unlimited practice can get as much service, and perhaps more, out of the ordinary uterine sound than out of any jointed instrument thus far constructed for the purpose of replacing the uterus I will admit; this is not saying that either are not imperfect and all that can be desired—far from it. Sir James Y. Simpson's sound, or any similar pattern, has all the advantages and will answer all the purposes for which the jointed sound is intended, but it has other defects common to all sounds thus far offered and used for reposition. A malposition which occurs

so often as to make the minimum fifteen per cent of all gynecological cases that present themselves for treatment is certainly of great importance in uterine displacements, and the general practitioner must inform himself, so that these cases may be recognized, because in their early recognition depends in a great measure the ease with which these deviations can be rectified. Heretofore I was not acquainted with a method which was so easy of execution, and required so little practice for a successful carrying out of a reposition of the retroverted uterus as my own. In fact, any person that is competent to pass a sound into the uterine cavity will also be competent to use my thimble sound, which will give entire control of the organ, all else being equal. To pick up, elevate, and antevert the pathologically enlarged and sensitive uterus, on the beak of a sound, is not without danger. It suggests to the mind the possibility of perforation, then there is the natural inconvenience of manipulating at the end of a long sound or instrument, instead of having it at the end of one's finger.

Reposition without the aid of any instrument is often possible, but it certainly requires experience and practice in uterine manipulations, which the general practitioner can rarely acquire.

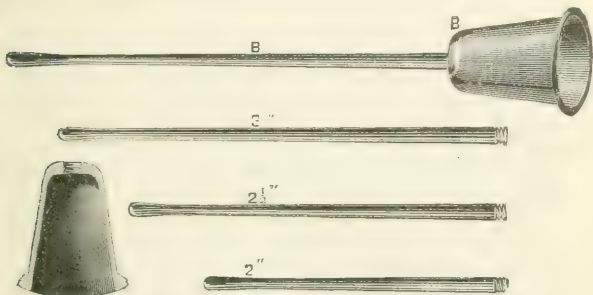
Bimanual reposition is never accomplished without more or less pain, in the following manner: The patient is placed on her back, the operator brings one or two fingers of the right hand into the posterior fornix, lifting the body of the uterus with this or these so high that the hand resting on the abdominal wall just above the pelvis (the left hand), which is being steadily depressed on its ulnar edge so that it can get behind the posterior aspect of the womb, lifting it up and forwards, while the index finger of the right hand still in the vagina tilts the cervix back.

Sometimes this procedure is impossible, even with the most skilful and practised, especially when the abdominal walls are tense, the vagina narrow and long, as in the majority of the women who have never borne, or only miscarried in the early months of pregnancy; and as abortions and the often following subinvolutions are a fruitful source of this displacement, these obstacles to a bimanual reposition are by no means rare.

I offer an instrument which, from its shape and the manner in which it is employed, and further, from the fact of having been invented by myself, I call Miller's uterine repositor. It

has all the advantages of either the plain uterine sound or any of the jointed instruments thus far recommended for replacing the retrodeviations, and none of their defects. It simply artificially elongates the index finger and gives the finger the same power as though the uterus had been previously dilated by sponge or sea tangle for the purpose of introducing the finger, and then effecting reposition as recommended by B. Schultze (*Centralbl. für Gyn.*, 1879. No. 3).

My thimble sound brings the uterus on the tip of the operator's finger, which is at once power and fulcrum, hence strains no tissue or ligament. The uterus being on the tip of the finger, is completely under the operator's control. The force



B B, repositor complete; 3", 2 1/2", and 2", stems, represent the three different lengths, which are severally screwed into the thimble, according to the size of the uterus which is to be replaced.

which one employs is keenly appreciated, hence no undue strain is likely to be exerted on adhesions which are too strong to be safely lacerated or even stretched, for I hold that slight and recent adhesions can be torn without any untoward result, provided the patient be put to bed for a few days and a little morphine administered.

Before introducing my thimble sound or any other into the uterine cavity, it is absolutely necessary that the vagina should first be thoroughly cleansed with a solution of carbolic acid, one-half ounce to the one-half gallon, and no less than this quantity must run through the canal at one time, a weak solution of castile soap, followed by a solution of borate of soda, say two teaspoonfuls to the one-half gallon, will also suit the purpose, the water must in every instance be from 104° to 106° F.

The next precaution must be exercised in thoroughly cleaning and disinfecting the sound or instrument to be used; immediately before using it, and while the patient is being placed in readiness for the operation, it must be kept in a solution of carbolic acid, one-half ounce to the one-half gallon; the water to be used for this solution should be thoroughly boiled, so as to be sure of its aseptic quality; from this carbolized solution, contained in a basin large or wide enough so as to cover the instrument, it is taken out with a little shake to free it from the superfluous water, and carried directly into the vagina for the purpose of introducing it into the uterine cavity. It is to be presumed that the lining membrane, and even the submucous tissue of the uterus will often be abraded or injured by the sound, but under the necessary antiseptic precaution these lesions will entail no bad consequences. If, on the other hand, antiseptics be not employed, then these injuries to the uterine cavity may usher in grave and serious complications, of which the least will be endometritis or metritis, pelvic perimetritis and cellulitis.

The position which the patient must assume in the first step of replacing the uterus, which is the introduction of the thimble sound into the uterus, is not of any importance. She can be placed on her back, and through a Fergusson's speculum, the sound may often be carried quite readily into the cavity, it being held at the rim or flange of the thimble by a dressing or polypus forceps. Sims' position on the left side is in some cases the most convenient where there is great flexion—and here it is well to remember how to overcome these flexions, as an obstacle to the introduction of the sound, so that others will not fall into the same error as Saenger in his criticism of J. Marion Sims' elevator.

His objections to Sims' instrument, and other similarly constructed jointed instruments, are, first, that they are capable of being placed at angles of different degrees only, and secondly, that they cannot be modulated or bent like the soft copper sound for the purpose of overcoming flexions (*Centralb. für Gyn.*, Oct. 17th, 1885, No 42).

His second objection is of no practical value: it assumes the physical impossibility of passing an angular rod through an angular canal, and the idea of bending or crooking a uterine sound so that it looks more like a tendril or corkscrew, with a view of

passing it more readily into the uterine cavity, as a delusion which often frustrates the best-directed efforts.

A. Martin ("Pathologie u. Therapie d. Frauenkrankh.," Berlin, 1885, page 18) says: "I cannot determine nor coincide in the utility of bending the sound after the supposed form or direction of the uterine canal. This would always presuppose beforehand the deviations, which can only be established through the sound, whereas, on the other hand, the impressions of a peculiarly circuitous canal will be of a doubtful nature on an already bent or distorted instrument."

In cases of extreme flexion, it is best, as before mentioned, to place the patient in Sims' position and, after exposing the cervix to view with Sims' speculum, grasp the posterior lip of the uterus with a volsella, then draw the cervix on a line with the abnormal axis of the body, which is generally towards the pubic arch; this will straighten out the angle of flexion between body and cervix, and a straight sound can then be readily passed, when otherwise it would have been an impossibility. I will mention here, by way of encouragement to the inexperienced, that sometimes the introduction of the sound is the most difficult and painstaking part of the operation. After the thimble sound is in proper place, remove the speculum, leaving the sound in the womb, permit the patient to rest herself on her back, or in any position she pleases, for a few minutes, then place the patient in the genu-pectoral position, for the second step in the reposition, and for reasons so ably and urgently recommended by Dr. Henry F. Campbell, of Georgia.

I had successfully employed the knee-chest position for years, both as a factor in replacing the retrodeviated organ, and as a theurapeutic agent, without having been aware of its formal introduction to the profession by Dr. Campbell. Mundé (*AM. JOUR. OF OBSTET.*, Oct., 1881), in an elaborate and masterly article on "The Curability of Uterine Displacements," has this paragraph: "A moment's thought will demonstrate the utility of this combined *vis à fronte* (gravitation of the abdominal viscera towards the diaphragm) and *vis à tergo* (air suction into the vagina and pressure against the vaginal roof). This position is to be assumed several times daily, and maintained each time as long as the patient can bear it, continued for months if necessary; the best time is at night on retiring, when the lateral position is to be taken for the night." This will relax and relieve

all uterine pressure, and give the uterus and adnexa rest while asleep. So much for the genu-pectoral posture in retrodeviations.

The patient having been placed in this position on the same table where my thimble-sound was introduced, the operator then takes a position on her left side, his left hand supporting and resting on the hypogastric region, ready to assist in bringing the organ forward. Rinsing the right hand in the above given strength of carbolyzed water, the index finger of the same hand is then carried into the vagina, in search of the thimble; this is readily felt. The finger is then carried further into the thimble and there fixed. The finger now in the thimble is equal, for elevating purposes, to having it in the uterine cavity; for what is my thimble-sound except an artificial extension of the operator's finger? The uterus is now gradually and steadily lifted up, now and then a little lateral motion will assist to dislodge it from its bed; the palmar aspect of the operating finger must, of course, be directed towards the symphysis pubis, so that on flexing the finger, the uterus will naturally incline forward, nearing its normal axis. When the vagina is very long or narrow, the complete normal anteflexion is interfered with, because you cannot flex your finger sufficiently; then withdraw the finger, but still retain the thimble-sound and the patient also in the same position, introduce Sims' speculum while in this posture, holding it with the left hand, while in the right a pair of dressing-forceps are taken, with which the thimble is gently tilted up towards the diaphragm, so that the opening of the thimble will be directed towards the second or third sacral vertebra—this is positive proof that the organ is now anteverted even to an abnormal degree, which is necessary in order to make the reposition complete and permanent. With the same forceps the thimble-sound is now withdrawn, a pledget of carbolyzed gauze or lint, a little medicated with iodoform vaseline ointment or glycerin is now placed against the os, and the patient put to bed for a few hours or days, according to the severity of the reposition.

There are three different lengths for one thimble, the size of the intrauterine stem to be selected for each particular case depends on the size of the uterus; a large subinvolved uterus may require the longest sound. It is better and safer, especially when slight adhesions exist, that the intrauterine stem be no larger than the uterine canal, or even that the stem be a little

shorter, then the beak of the sound will not support nor press on the fundus, but the uterus will rest rather on the shoulder of the thimble.

The after-treatment for retroversion or flexion is to be directed towards retaining the womb where it naturally belongs. This, where the pelvic floor was intact, has given me little or no trouble in a large proportion of cases, so that I am forced to the conclusion that retention in many cases depends, first and foremost, upon a thorough and complete replacement and, as before remarked, anteverting the organ. A preliminary, however, to the treatment of retrodeviations consists in getting the patient accustomed to sleep either on the chest with face turned to one or the other side, or in Sims' position, which is a semi-prone posture on either the right or left side; the right or left arm, as she sleeps on the right or left side, flexed, with the corresponding forearm under the chest. This is a modification of the genu-pectoral position. Perseverance, for a few weeks before undertaking treatment, in sleeping in this way will be an important step towards a cure, and when once in the habit the sleep will be more refreshing than sleeping on the back, which most women are prone to do.

Then again there are uteri which are long and greatly relaxed, especially between cervix and corpus. Here an intra-uterine stem will be the most suitable support, and assist in establishing a normal rigidity.

If the vaginal canal be not too wide or relaxed, then a Hodge's pessary, or Thomas' modification of Hodge's, will often keep the womb in position, unless the organ be so immensely enlarged from chronic metritis or in a state of subinvolution, so that the weight of the womb overcomes the leverage of the pessary. When this is the case, we must first effect a reduction of the abnormal size of the organ, and the most effective means to this end is the amputation of the cervix; nothing will so stimulate the womb to involute as this surgical expediency. Where the vagina or perineum is lacerated, colporrhaphy or perineorrhaphy, with or without cervical amputation, will assist in bringing about a cure.

REMARKS ON THE RELATION OF MENSTRUATION TO THE SEXUAL FUNCTIONS.

BY

WM. M. McLAURY, M.D.,
New York.

THE menses are defined by Dr. Dunglison as "a flow of blood from the uterus occurring in the healthy female every twenty-eight days, or a lunar month." Hence the synonyms "lunaria," "courses," "flowers," "menses," "menstruation," "catamenia," "monthly periods," etc.

The term "flowers" marks the analogy of the person with vegetable life, and this analogy holds true through the whole phenomenal process of flowering, germinating, and fruit-bearing in both animal and plant life.

There is no physiological action occurring in our own systems that we cannot find its counterpart in lower animals and plants. It is only when civilized man thwarts nature that we find deviation from her laws, and inharmony and suffering ensues.

Physiologists fail to tell us of the causes of menstruation. The menstrual differs from venous blood in its peculiar odor and in its not coagulating. The function is evidently connected with the condition of the ovaries and, it has been supposed, with the periodical discharge of ova from them.

Menstruation may be arrested or suppressed by a shock, a sudden fright, a sudden fit of anger or jealousy, great anxiety or any powerful emotion; these may also cause its appearance and even so affect the maternal organ as to expel the impregnated germ.

The breasts and uterus exhibit the most intimate relationship. When menstruation begins, the breast develops and becomes a feature of beauty. When the uterus or ovaries become diseased, the breasts lose their elastic rotundity and become atrophied and flabby.

I have seen inflamed breasts coincident with a congested cervix, and spontaneous relief to the breasts when the congestion or ulceration was successfully treated. I believe certain patho-

logical conditions of the womb may be inferred from tumefactions of the breast.

Very little is recorded by writers on these subjects as to the intimate sympathetic relation between the womb and its appendages and the breasts. We are all familiar with the fact that at the menstrual periods the breasts and nipples become somewhat turgid and sometimes painful ; that lactation is vicarious to menstruation ; that amorous toying with the nipples and breasts, and even the traction of a baby's mouth on the nipples will excite the ovaries and womb.

Menstruation is physiologically arrested by pregnancy and lactation, and pathologically by certain conditions of malnutrition that prevent the formation of red blood-corpuscles. Hence the necessity of ferruginous preparations to increase the blood-making power. An ulcer may bleed at every monthly period, or epistaxis may occur regularly, thus establishing a vicarious flow.

The age at which the human female menstruates varies with race and climate. People inhabiting the temperate zones usually begin at 14 and cease at 45. In tropical countries, both animal and plant life mature much more rapidly, so that girls have become mothers at 8 years of age, and frequently at 10 and 12. In 1880, I sent to the lying-in hospital a girl 13 years of age, and who even looked younger. She was the oldest of four, and her mother had never been married. She was born on a boat running from Bangor to Boston. She had, from her earliest recollection, cohabited with boys and men without restraint from her mother or any one else.

In 1858, there was living in Taunton, Mass., at the public charge, a mother not quite 11 years of age. Barnum's baby woman menstruated and had pubic hair, well-developed breasts, and intense amorous desires at 3 years of age.

A woman who, a few years ago, lived in Saratoga Co., N. Y., was a grandmother at 28. An old journal describes a case of a child menstruating at 1 year old, and, becoming pregnant at $9\frac{1}{4}$ years, was delivered of a female child weighing seven and three-fourths pounds ; age of mother, 10 years and 13 days.

Sir Astley Cooper cites a case of a child menstruating regularly at 4 years and another at $3\frac{1}{2}$.

The ovum exists before the generative function is established ;

it is found without difficulty in the new-born female, and may even be detected in the fetus before birth.

Although ova exist in the young girl, they are without functional activity until near the period of puberty.

Dalton says there are exceptional cases in which fertility exists without menstruation and menstruation without ovulation. There are exceptional cases where women menstruate without the least show of color. I believe these cases are more frequent than we think. It is proved by the fact that many women have been pregnant who apparently never menstruated. We have reason to suppose that germ production takes place all through the period of lactation, but less energetically, the woman not perceiving that she menstruates. The lacteal secretion becomes vicarious to the sanguineous flow.

The period of puberty is manifested in various ways. Birds change their plumage—the colors become more varied and brilliant. In the barn-yard fowls, the comb or crest enlarges, becomes red and vascular. In the deer the hair, which is mottled with white, changes to a dun or reddish tinge and loses its spots.

The girl shows more change at puberty than the boy. Her form becomes plump and rounded, showing an increased healthful stimulant to all the forces of growth and nutrition; her eyes become bright and expressive, showing a corresponding increase in her intellectual capacity; her voice more full and musical; timidity is out-grown, courage greatly enhanced; she now finds herself an individual with mental powers and ideas, with courage to express them. At this age personal magnetism becomes a potent factor.

In the adult female, successive crops of eggs ripen and are discharged by the rupture of the Graafian follicles. This is done by an independent, individual functional activity of the female organism, irresponsive of sexual intercourse. Hens lay eggs, though, without the official action of the cock, they will not hatch chicks. The examination of animals, both wild and tame, shows that Graafian follicles have matured, ruptured, and discharged their eggs, though no sexual intercourse has taken place. This ovulation is the chief business of the feminine functions, and the health and happiness of the female depends upon the integrity with which it is performed.

This period of ripening and rupturing of the Graafian folli-

cles is known as the rutting season, or period of œstruation. At this period, the female always tempts the male to feasts of sexual love, and experiences an inexpressible disappointment when not having her natural healthy desires responded to. This is as true of the human female as it is of the animal, domestic or wild. If man would take a lesson from the lower animals, and not coerce or over-persuade, but await the wife's invitation at this time, when her husband is a hero in her eyes, he would enjoy more and suffer less. The health of both would be greatly augmented, strength of body and mind would be generated, and blissful, peaceful rest ensue. Men often act in such a manner towards their females as to cause in them not only disgust, but actual suffering, and all inadvertently from want of comprehension of their extreme sensitiveness at certain periods. Females feel often that they are not appreciated, that they have no one to confide in; then they become morose, angular, and disagreeable as a result of continual disappointment to their social and sexual longings. Even those married may become the victims of sexual starvation when the parties are mentally, magnetically, and physically antagonistic.

Much is said and written in our day of the "age of consent." Heretofore legislative bodies have deemed it due to the female to place it at the age of her maturing to womanhood, as indicated by menstruation. Doubtless abuses occur that may be partially remedied by considering girls infants till eighteen years of age, but this law bears with cruel severity upon many young females, and interferes with their opportunities for marriage, of which woman, according to our social laws, has only a negative choice.

Better than enacting arbitrary laws would it be to instruct both men and women in the natural law, and thereby enable them to respect and love each other for the mutual benefit, and not for the indulgence of mad passion. This is done by people and nations that we stigmatize as heathen and barbarous.

One expert on this function maintains that if children, male and female, before the nubile age, were educated to use the love nature, as universally manifested through the sexual impulse, in a natural way, and not unduly repressed, but cultivated by loving embraces, the effect would be to place ovulation, menstruation, and conception entirely under the control of the individual.

Under the status of such a social law, when a woman desired to become pregnant, all that would be necessary to bring that about would be to repress her impulses to loving embraces and abstain from sexual expressions of love a month or two, when ovulation, menstruation, and conception would come along duly in their order.

The social custom prevailing for generations and centuries among the Zulus of South Africa would seem to prove this, as their custom is to instruct the children to have sexual embraces from infancy up, and yet they never get pregnant until they are married ; then it is accounted a disgrace not to have children. In our present state of society, there is no possibility of proving this.

In Ceylon, man attains his majority at sixteen, and a woman at the age of puberty, say from eight to fourteen years of age. The Singhalese are said to be indulgent husbands, and easily forgive the wife's offence where other nations would deem it unpardonable.

Goldsmith says the Hindoos regard marriage as a religious duty, and very few exempt themselves from the obligation. It is forbidden to purchase the wife for money, though the father expects an endowment for his daughter. The father has the right of disposal of his daughter till three years after the age of puberty ; if not married then, she may dispose of herself. They are usually betrothed while very young and immature. Severe laws are enacted against unchastity, but more for preserving caste than morality, as the indiscretion is easily forgiven if caste is not involved. In Rapootana, women are held in high esteem and are consulted on all important occasions. They have a proverb: "When wives are honored the Deity is pleased, and angry when they are dishonored."

The king of the Sandwich Islands deems his wives sufficiently moral if they restrain themselves from sexual love after menstruation till he has had a sexual embrace; then they may, without sin, cohabit with whomsoever they choose, till they menstruate again.

We read of the most revolting cruelties and crimes against women in the highest enlightened nations of Europe and America. The mother of Anne Boleyn warned Henry VIII. against marrying Anne, as she asserted that he was her father. Anne was, however, at the time pregnant by Henry VIII. A few years later Anne was executed by order of Henry for adultery

and incest, the incest being with her half-brother, Lord Rochford. Surely there is something wrong in our "social ethics" that renders these things possible. Now that *something* is trying to place man's laws higher than God's natural law.

The old Levitical law made it a sin for a wife to be unwell, and prescribes the sin offering and priestly atonement therefor.

Many of our customs and laws are about as absurd.

There is ample authority for the statement that in no city or capital on the continent of Europe is there daily and nightly such shameless display of prostitution as in London.

The history of the church trials where girls and boys testified that they were ravished by spirits called Incubes and Succubes, the former being male, the latter female, has a bearing in regard to the age of puberty, as many were tried under ten years of age. Many nuns as well as married women confessed to having been visited by Incubes for long periods of time, and neither fasting nor prayer nor spiritual consolation could rid them of these visits. The record states that there were more girls than boys visited in this way. Lady Frances Howard, daughter of the Earl of Suffolk, obtained a divorce from her husband, Earl of Essex, to whom she was betrothed at thirteen years of age, because he was deprived of his virile power by Succubes.

Phantom pregnancy is one of the very mysterious manifestations of ovarian disease. Smellie mentions a girl in a workhouse, twelve years of age, supposed by the medical examiners to be in her eighth month of pregnancy, but all the indications proved fallacious. Doubtless you are familiar with the case of Johanna Southcott, the aged virgin prophetess, who, at sixty-four years of age, proclaimed herself pregnant by supernatural means. Dr. Richard Reese and several other physicians were deceived by her assertions and condition. Reading of Johanna Southcott reminds me vividly of a patient I saw in 1880, who styled herself the veiled lady of the sun. She imagined herself pregnant by spirit power. Many New York doctors saw her. She was sent to the insane asylum, where she remained a year or more.

Tait quotes Simpson and Harvey to prove that the analogue of this condition, phantom pregnancy, has been observed in cows and bitches, and asserts that he has seen a similar affection in mares. He says: "A peculiar nervous machinery is

put in action the moment a fertilized ovum becomes attached to the uterus or tubal mucous surface, and that machinery sometimes gets a false start."

Although the menopause occurs usually at from forty-two to forty-six, cases are numerous where the menses continue to fifty-five, and even to sixty-five in rare instances. A statement appeared in one of the journals that a woman at Batavia, N. Y., gave birth to a healthy male child at sixty-four years of age. I attended a patient in confinement in 1874 at fifty-six years of age, and in 1879 I attended an old maid forty-three years of age with her first baby. She assigned the paternity of her boy to a young lawyer of twenty-seven years, who was acting as tutor in a school where she was employed. She said she thought she had passed the change of life, and took no precaution to prevent pregnancy. An old nurse told me Nov. 7th, 1886, that she nursed the wife of a doctor, whose mother was sixty-six years of age when the wife of the doctor was born. Madame de Stael menstruated till the age of sixty. Richerand mentions a case at seventy. One table of statistics gives five who menstruated to sixty-nine.

Statistics taken at Manchester Lying-in Hospital: out of 450 cases, 10 menstruated at 11 years of age, 19 at 12, 53 at 13, 85 at 14, 97 at 15, 76 at 16, 57 at 17, 26 at 18, 23 at 19, and 4 at 20.

Statistics taken at Paris in 1872: there were 5,558 prostitutes, ranging in age from 12 to 63 years; 34 were inscribed before the age of 14.

Tait states that in Scotland the average age at which girls commence abandoned lives is from 15 to 20.

Statistics taken in this city in 1858 embraced 2,000 prostitutes, ranging in age from 14 to 77.

The *Philadelphia Medical and Surgical Reporter* reports a case of amaurosis through suppression of menstruation in a girl of twenty-one. She suppressed menstruation by immersing her feet in cold water. This occurred on the 30th of July. Soon afterwards she felt a peculiar sensation of pressure in both orbits. On the 5th of August, she had complete double amaurosis. The following month, notwithstanding the use of emmenagogues, the menses did not appear, and skilful treatment but partially relieved her eyes; seven weeks after menstruation returned, and with it disappeared all visual trouble.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

REPORTED BY THE SECRETARY, DR. H. C. COE.

Stated Meeting, December 21st, 1886.

The President, DR. P. F. MUNDÉ, in the Chair.

CASE OF PELVIC ABSCESS, COMPLICATED WITH FIBRO-CYST OF THE UTERUS—EXPLORATIVE LAPAROTOMY.

DR. WYLIE reported the case of a healthy-looking young woman, who entered his service in Bellevue Hospital, complaining of pain and tenderness in the lower part of the abdomen, attended with fever. On examination, a fluctuating tumor was discovered behind, and to the right of, the uterus, which was considered to be a pelvic abscess, doubtless associated with pyo-salpinx; at the same time a fibrous tumor of the uterus was felt. On tapping the mass, about two ounces of inodorous pus were withdrawn. It was decided to perform laparotomy, with the object of removing the appendages, both because they were probably diseased, and in order to check the growth of the fibroid. On opening the abdomen, a fibro-cystic tumor was seen, growing from the right horn of the uterus, and pushing the organ over to the left. The growth was immovable, and its character was recognized by the fact that it contained a serous, bloody fluid, a specimen of which was withdrawn through a hypodermic needle. On the left side of the uterus was a mass of adhesions covering an abscess that was undoubtedly of tubal origin. Hysterectomy was the only operation possible under the circumstances, and this Dr. Wylie was unwilling to attempt, because of the presence of the pelvic abscess. The abdominal wound was accordingly closed, and an unsuccessful attempt was made to remove some more pus through the vaginal fornix; the patient made a normal recovery, and was then, after the expiration of two weeks, in good condition, but the abscess had refilled and was again pointing in the vagina. Would it have been better, the speaker asked, to perform hysterectomy?

DR. JANVRIN did not see why the presence of inoffensive pus in the pelvis served as a contra-indication to the operation.

THE PRESIDENT remarked that the question seemed to be, if we can cure pelvic abscess by drainage through the vagina, why resort to laparotomy? It was a problem that presented itself daily for solution.

DR. WYLIE said that, as long as the *cause* of the abscess remained, the latter might refill indefinitely.

DR. NICOLL asked concerning the indications for laparotomy.

DR. WYLIE replied that he expected to perform at the same time Tait's and Hegar's operations—to remove the pyo-salpinx, and to arrest the growth of the fibroid.

CASE OF GANGRENOUS STOMATITIS, COMPLICATING CATARRHAL PNEUMONIA.

DR. MURRAY said that he was attending an infant, aged nine months, who, three weeks before, had developed bronchitis and subsequently catarrhal pneumonia, the entire left lung and a portion of the right having been involved. The temperature was uniformly high, antipyrin and digitalis being given whenever it rose above 103° F. On the previous Wednesday a small blue spot, about the size of a split pea, was noticed on the lower lip; four hours later it had increased to twice its former size, and in four hours more to six times its original extent, and presented the appearance of a gangrenous ulcer involving the outer side of the left lip. The child was seen by Dr. Jacobi, who confirmed the diagnosis; with the speaker's assistance, Dr. Jacobi applied Paquelin's cautery thoroughly, burning out the entire necrosed part as freely as possible, and leaving a large black eschar. The child submitted to the operation without a struggle, although no anesthetic was employed. The edges of the eschar became diphtheritic, and a bleb formed that increased to a large size. At present there was a large slough, extending from a point near the left corner of the mouth to the chin, while the entire inside of the lip was black. The child was stimulated with large doses of musk, as well as with tincture of digitalis (two drops every hour), but was much depressed; pulmonary oedema had recently developed, and the temperature was 104° F. at the last visit. Dr. Murray called attention to the rare occurrence of gangrenous stomatitis as a complication of pneumonia. If the child recovered, it would be the first successful case that he had seen. Dr. Jacobi's experience included eleven cases, all of which terminated fatally.

DR. COE said that he had examined the body of a child whose lip presented an appearance almost identical with that described by the speaker.

DR. MORRILL referred to an epidemic of gangrenous stomatitis that occurred several years ago in one of the public institutions of the city, eighteen or twenty cases having been reported. These were treated by Dr. McGuire, who introduced the practice of applying subnitrate of bismuth freely to the ulcers. Under this treatment every case was saved, although some of them were extremely severe. The results of the treatment were confirmed by several prominent specialists in diseases of children.

DR. MURRAY asked if the original cause of the epidemic was known. Dr. Morrill replied that it accompanied an epidemic of measles, but was undoubtedly due also to bad feeding. Dr. Murray said that the prognosis of gangrenous stomatitis was modified by the disease which it complicated. It was certainly a rare, as well as a dangerous, complication in catarrhal pneumonia, especially in a young infant.

DR. PARTRIDGE remarked that at the time when Dr. McGuire reported his success with the bismuth treatment, an epidemic of gangrenous stomatitis occurred at the Nursery and Child's Hospital. The late Dr. Beverly Livingston carried out this treatment carefully, after studying the method with Dr. McGuire, but the cases did very badly.

CASE OF SLOUGHING WOUND OF THE LABIUM, COMPLICATED WITH
TYPHOID FEVER.

DR. COE narrated the case of a girl, aged 14, whom he had seen in consultation. A few days before she had gone out on an errand at night-fall, and while passing through a lonely street was assaulted by a young man. She was so overcome with fear and shame that she said nothing about the matter, and brooded over it for several days, when she fell into a low fever. She then told her mother that she had a sore on the genitals. Her condition grew rapidly worse, she complained of pain and tenderness in the abdomen, suffered from extreme mental depression, and lapsed into a stupid condition from which it was difficult to rouse her. When seen by the speaker she presented the following appearance: Rather small for her age, considerably emaciated, face flushed, eyes dull and mental condition stupid, skin hot and dry, pulse 120, temperature 103° F. External genitals fairly developed, mons small and covered with straggling hairs, labia immature and vulvar cleft small, the hymen being intact. On the right labium and nympha, near the fourchette, there was a superficial ulcer as large as a quarter of a dollar, the edges of which were neither elevated nor indurated; there was moderate swelling of the labium, but no glandular enlargement could be detected. The vulvo-vaginal mucous membrane was congested, and there was a purulent discharge from the vagina. The abdomen was slightly distended, but the pain and tenderness appeared to be located rather in the pelvis. From the extreme reticence of the little patient (who felt her situation keenly) and the vagueness of the history, it was impossible to form a definite opinion as to the original character of the lesion. It was at first supposed that the sore was of a chancroidal nature, or that gonorrheal infection had been conveyed to her at the time of the assault, resulting in rapidly developing salpingitis and peritonitis. But a careful examination showed that penetration had not occurred, and that the sore was due to a laceration of the right labium by the male organ. The febrile symptoms were therefore not sufficiently explained by the local condition. The patient grew rapidly worse during the night, and her condition became so alarming that her ante-mortem statement was taken by the coroner, her assailant being arrested and positively identified by her. Soon after she improved, and the diagnosis of typhoid fever was readily made. She was very ill, having intestinal hemorrhage, but eventually became so much better that she was considered convalescent, but an imprudence

in eating brought on a relapse, and she succumbed at the end of the fourth week, with symptoms of meningeal trouble. In fact, the mental distress of the patient appeared from the outset to retard her recovery. The local lesion proved to be of no importance. Dr. Coe concluded by saying that he had mentioned the case, because of its medico-legal, as well as diagnostic, interest. The question was how much the mental and physical shock resulting from the assault had contributed to the fatal termination of the disease.

CASE OF PREGNANCY IN ONE HORN OF A DOUBLE UTERUS, WITH
SUCCESSIVE MISCARRIAGES.

THE PRESIDENT stated that, six weeks before, he had been called to see a lady who had previously had two miscarriages (one at the seventh, the other at the fifth month), for which no cause could be discovered. The uterine contractions would continue for a week or more until the fetus was expelled. When seen by him, she was in the fifth month of her third pregnancy, and had been in bed for a week with the same kind of pains that she had experienced before her other miscarriages took place. She was using opium suppositories.

On examination, the os was found to be somewhat patent, the cervix being generally softened. The fetal heart was heard, but indistinctly, as is usual at such an early period. An enema, containing fifteen grains of chloral, was ordered four times daily, with a teaspoonful of the fluid extract of viburnum prunifolium every three hours, absolute rest in bed being enjoined. The uterine contractions became less marked, but they nevertheless continued for four weeks. About the middle of the sixth month, the President was again called to see the patient, and found her in labor. The child was born alive (footling presentation), but died an hour after its birth. Her family physician, who arrived before him, had not introduced his hand for the purpose of removing the placenta, as he had recently been exposed to septic infection. After waiting for an hour, and trying to express the placenta, the speaker made a vaginal examination, but could feel nothing except the cord, which could be traced upward into the uterus. On introducing three fingers into the uterine cavity, he could at first feel nothing; the cord seemed to disappear somewhere. Suddenly his fingers slipped into a pocket, at least three inches deep, on the left side of the cavity, but the latter was empty. Further search revealed the presence of a median septum, on the right side of which was another larger pouch, containing the placenta. The condition was evidently one of *uterus bicornis* in a minor degree. The placenta was removed with great difficulty, and the woman made a good recovery, being carefully watched and treated with applications of ice to the abdomen, through fear that she might have a recurrence of a parametritis that had complicated her first labor.

The interesting point in the case was, whether, in the absence of any other known cause, the malformation of the uterus was not accountable for the repeated miscarriages.

DR. McLEAN said that the case reminded him of an identical one that had occurred in his own practice. He had been called by another physician to see a woman whose labor had been quite normal, but the placenta failed to come away. On examination, the condition was similar to that just described; the main portion of the uterine cavity was found in the centre of the organ, while on the left side was a small pouch. The cord was apparently lost within the cavity. On examining the uterus after involution had been completed, he detected without difficulty the septum between its two cavities.

DR. PARTRIDGE asked if premature delivery usually occurred in cases of double uterus.

DR. WYLIE cited a case of complete *uterus bicameratus*, in which the patient had borne two living children from the left-hand cavity. There were two distinct cervixes, that on the left side having been so lacerated as to require an operation for its repair.

THE PRESIDENT remarked that it was well known that the fetus could be carried to full term in a double uterus, provided it was contained within a horn that was properly developed; but if the horn was small and imperfect, either abortion or rupture of the uterus might occur. He inferred that in the case which he had described the repeated miscarriages were due to the fact that the fetus developed within such an imperfect horn.

DR. PARTRIDGE could not accept this explanation; if abortion was due to a rudimentary condition of either cornu of a double uterus, why did not the same condition exist at the time of conception, when the normal uterus was rudimentary, as viewed from an obstetrical point of view? He cited the case of a patient with a complete double uterus, in whom labor was perfectly normal.

CAN OLD INTRA-PELVIC ADHESIONS BE STRETCHED BY CONTINUOUS VAGINAL PRESSURE?

The discussion (which was opened by Dr. Coe at the previous meeting) was resumed by DR. MORRILL, who narrated the case of a lady whose uterus was retroverted and firmly fixed for over twenty years by adhesions resulting from a pelvic abscess. She had been under treatment for retroflexion, and consequent dysmenorrhea, for a year and a half. The speaker packed the vagina firmly every day for two months and a half, at the expiration of which time the uterus was restored to its normal position. Dr. Coe had examined the patient repeatedly and could testify to the present mobility of the organ.

DR. HANKS thought that every gynecologist had had cases in which he thought that he had stretched old adhesions and raised an imprisoned uterus. He cited the case of a patient whom he had seen for the first time nine months before; she gave a history of dysmenorrhea and pelvic pain, dating from a time two months after marriage, and had long been under treatment with only partial relief. The uterus was retroverted, and was fixed in that position by a cicatricial band, which could be plainly felt through the rectum. She was tamponed three times a week for three

weeks, until the organ was raised to such an extent that a pessary could be worn.

DR. JANVRIN thought that there was no doubt concerning our ability to elevate the entire uterus above its former plane by means of vaginal tampons, but the question was, do we raise it and at the same time eliminate the adhesions? We should make a distinction between a uterus that was fixed on account of its size or weight, and one that was fixed by true adhesions; in the former case it was an easy matter to restore the organ to its normal position by packing. The speaker had had an opportunity to observe carefully Dr. Bozeman's method of applying the vaginal column, and was convinced that that gentleman did frequently lift the uterus into place in this way, but the question always arose whether the organ was really fixed by adhesions. When there were true cicatrices in the broad ligaments, or bands connecting the fundus uteri to the rectum, tampons and pessaries were in most cases of no avail. But, even when firm adhesions were present, the patient was benefited, as Dr. Coe had stated in his paper, by raising the entire uterus. In some instances the speaker believed that he felt adhesions more distinctly after a long course of treatment than before.

DR. HANKS believed that, when he placed a patient in the knee-chest position, and, introducing his sound, rotated a retroverted uterus half around, the fact that the organ returned to its original position proved that it was confined in that position by adhesions.

DR. FOSTER did not understand how a uterus, that was really "fixed" in the position of retroversion, could be rotated forwards without actually rupturing the adhesions.

THE PRESIDENT remarked that he had a patient in whose case he could distinctly feel the traction made upon the rectum whenever the retroverted uterus was turned forwards on a sound.

DR. HUNTER said that old adhesions were not like rubber bands; they were firm and non-elastic, and could not be stretched by pressure. He had recently felt such bands behind the uterus in a case of laparotomy, and found that they did not give in the least degree. He had broken down recent adhesions, and had seen others softened, and even absorbed, but he could not recall a case in which they had yielded as the result of his treatment. We doubtless took a great deal of credit for accomplishing results which should probably be ascribed to nature.

DR. WYLIE thought that our ideas regarding pelvic adhesions and indurations had changed during the past ten years. Formerly they were regarded as constituting a kind of distinct disease, but now the idea was gaining ground that, if the diseased organ was removed, the surrounding adhesions were of little consequence. He used medicated tampons, but rather with the view of elevating the entire uterus and improving the general pelvic circulation, than of stretching adhesions. If diseased tubes and ovaries were removed, adhesions would give no more trouble.

THE PRESIDENT closed the discussion by expressing the opinion that old adhesions could not be stretched sufficiently by intra-vaginal pressure to allow of the replacement of a retroverted uterus, but by lifting the organ to a higher level in the pelvis, we undoubtedly benefited the patient, and relieved her distressing symptoms.

Stated Meeting, January 4th, 1887.

The President, DR. P. F. MUNDÉ, in the Chair.

TENACULUM WITH STEEL SHANK, SO CONSTRUCTED AS TO INDICATE THE DIRECTION OF THE POINT.

DR. HANKS exhibited an improved tenaculum that was of the ordinary shape and size, but differed from other instruments of the kind in this respect: The steel shank was so constructed that



the steel extended along the back of the handle, on the side opposite to the point, or hook. When the latter was buried in the tissues, the direction in which it pointed would always be indicated by the metal back, as in the case of Simpson's sound, so that the hook could be disengaged immediately.

COMBINED TENACULUM AND COUNTER-PRESSURE HOOK.

DR. HANKS also presented a strong tenaculum, with a steel shaft, the pointed end of which formed a hook, bent at right angles to the shaft. The following advantages were claimed for the instrument: 1. It was much stronger than the ordinary tenaculum, and, as in the instrument previously exhibited, the direction of the point was indicated by the steel on the back of the handle; 2. The counter-pressure hook was strong and formed about three-fourths



of a circle, having a diameter of one-third of an inch. The point was short ($\frac{1}{10}$ in.) and sharp. With this tenaculum the operator could seize and hold the tissue of the cervix, while passing the sutures, until the needle was fairly engaged, when counter-pressure could be made. Dr. Hanks had found the instrument of value in case of the absence of skilled assistants. It could easily be manipulated with the left hand, the point being introduced in such a manner that its direction was towards the right. The present instrument was an improvement upon the one presented by the speaker several years before, because both of the simplicity of its construction, and the presence of the tenaculum-point.

DR. CLEVELAND said that he had used the instrument just described, and had found that it was difficult to steady the point while passing the needles.

DR. CHAMBERS spoke in terms of approval of the hook, which he had been using for some time and preferred to the ordinary variety.

THE PRESIDENT did not like the instrument in its present form, as the shank was too long and slender, so that it bent easily; the

main point to be aimed at in the construction of a counter-pressure hook was to have the shaft so stout that a considerable amount of force could be applied to it without making it bend. It seemed to him that the hook would be constantly entangled in the tissues, so that time would be lost in disengaging it. There was no particular need of steadying the cervix after the needle was fairly engaged. The speaker called attention to the advantages possessed by a two-pronged counter-pressure hook, that he had devised, and shown to the society, several years before.

DR. HANKS acknowledged the justness of the President's criticism with regard to the slenderness of the shaft.

SPECIMEN OF ABORTED OVUM.

DR. NILSEN showed an ovum expelled about the third month, by a young woman who did not know that she was pregnant, having menstruated regularly. Uterine contractions began during the night, and the ovum came away readily, but a slight hemorrhage accompanying it. The cause of the abortion was not known. The woman's husband had contracted gonorrhea a few months before, and possibly syphilis also; the speaker asked if syphilis contracted early in pregnancy could lead to abortion so soon after infection.

DR. FOWLER did not see how any one could diagnose syphilis with such an indefinite history; it would be necessary to await subsequent developments.

THE PRESIDENT did not believe that recent syphilitic infection could produce abortion at such an early period as the eighth or tenth week.

DR. GILLETTE did not think that syphilis, contracted during pregnancy, would manifest its abortive influence before the fifth or sixth month.

CYSTIC OVARY REMOVED BY LAPAROTOMY—RECOVERY.

DR. HANKS showed an ovary which he had removed a few weeks before from a lady forty years of age, of a highly nervous temperament. She had been under the care of various physicians in Boston and New York, having been practically an invalid for six years. She suffered from more or less constant pain in the pelvis, extreme dysmenorrhea and menorrhagia, and also presented reflex symptoms (nausea, mastodynia, etc.). Her face had the "drawn," care-worn expression of one who had been a great sufferer. Her local condition was retroversion, with prolapse and fixation of both ovaries, which were exceedingly tender to the touch; a small sub-peritoneal uterine fibroid could also be felt by the bimanual. The patient was seen by Dr. Lee in consultation, that gentleman confirming the diagnosis and concurring with the speaker in regard to the propriety of performing laparotomy. The operation, after-treatment, and convalescence of the patient presented nothing of interest. The specimen was shown with the view of eliciting a reply to a question which the speaker desired to ask, viz.: How long would such a cystic ovary continue at its

present size without enlarging, and was there any probability that it might eventually have become a large cyst?

DR. GILLETTE asked regarding the present condition of the patient.

DR. HANKS replied that, although it was too soon after the operation to make any positive statement, he believed that there was a marked improvement in her nervous condition.

THE PRESIDENT said that the speaker's question was an exceedingly difficult one to answer, because we are rarely able to keep patients under observation sufficiently long to note the gradual enlargement of an ovary until it becomes a large cyst.

DR. COE remarked that the impression that he gained by a superficial examination of the specimen was, that only a portion of the gland was diseased, and that the cyst was clearly peripheral and unilocular—all of which went to show that the condition was probably simple *hydrops folliculi*, limited to one (or perhaps two) of the Graafian vesicles. There was no reason to think that an ovarian cyst of any considerable size would have developed from the dilated ovisac. He cited the case of a patient whom he had kept under constant observation for three years, watching the gradual enlargement of her prolapsed cystic ovaries, until they reached the size of large oranges, when he removed them by laparotomy. He agreed with the President in believing that it was impossible for any one to predict that a cystic ovary in any given case would eventually become a large cyst; however, he was satisfied, from clinical observation, that it was sometimes possible to detect the gradual enlargement of prolapsed ovaries, although, after attaining a certain size, they often seemed to become stationary.

DR. NILSEN recalled cases in which cystic ovaries had remained unchanged for years.

DR. JANVRIN remarked that he had previously presented a specimen like the one shown, in which there was moderate cystic degeneration of the ovary with well-marked pyo-salpinx. The patient had a history similar to that of Dr. Hanks' case. He thought that there were many cystic ovaries in which the increase in size was very slow during the course of several years.

THE PRESIDENT cited the case of a young woman who suffered from intense dysmenorrhea and constant pelvic pain, and who had a discharge of pus at every period. When removed, the ovaries were adherent, but were slightly diseased, and the tubes only much congested. She was entirely relieved by the operation.

SARCOMA OF THE OVARY—ASCITES DUE TO PRESSURE ON THE VENA CAVA INFERIOR BY A DISPLACED KIDNEY.

DR. COE showed a solid tumor of the ovary, removed by Dr. Thomas from a woman 50 years of age, who died from peritonitis following laparotomy. He desired to call attention to a single point in the case—the existence of well-marked ascites and anasarca of the lower extremities, the cause of which was obscure. It was a habit with laparotomists to infer a direct causal relation between ascites and abdominal tumors, when the two conditions were associated; moreover, they were apt to regard the tumor as the etiological factor, even in cases where it was so small and so movable that there seemed no reasonable excuse for inferring obstruction from

direct pressure of the growth. The case presented 'illustrated the necessity of eliminating every possible source of venous obstruction before attributing it to the tumor. At the autopsy, the left kidney was found to be transformed into a firm, cartilaginous mass, about half the normal size, all trace of gland-tissue having disappeared. The organ was drawn inwards by old cicatricial bands, so as to occupy a position directly over the vena cava inferior; there was every reason to believe that the vessel was compressed between the kidney and the vertebral column. There seemed to be no other lesions in the thoracic or abdominal viscera sufficient to account for the venous obstruction. A microscopical examination of the affected kidney showed that it consisted almost entirely of firm fibrous tissue, with here and there a small collection of cells of an epithelioid type (scirrhus?). Sections of the ovarian tumor presented the ordinary appearances of spindle-celled sarcoma.

DR. POLK cited, in connection with the question of the diagnosis of ascites, the case of a young woman who entered his service at Bellevue Hospital, with an enlarged abdomen, showing general fluctuation and other evidences of fluid in the peritoneal cavity. As the enlargement had appeared very rapidly, and there was general abdominal tenderness and elevation of temperature (102° - 103° F.) at night, he determined to open the abdomen and ascertain the origin of the trouble, the usual causes of ascites having been excluded. The cavity contained an opalescent fluid that had escaped from a ruptured ovarian cyst. There were two ovarian cysts and a uterine fibroid, the latter causing enlargement of the uterus as much as at the fifth month of pregnancy. The case was mentioned because it showed that the origin of the fluid could not have been definitely determined without opening the abdomen.

DR. CHAMBERS was sure that ascites might be produced by the pressure of an ovarian tumor, even when the latter was benignant; he recalled a case of dermoid cyst associated with this condition.

DR. WYLIE thought that it was proper to operate in cases of ascites of obscure origin. He had cured two cases of tuberculous peritonitis by employing permanent drainage. In reply to a question from Dr. Polk, he said that drainage might be beneficial even in cardiac and renal dropsy.

DR. POLK thought that, in discussing the surgical treatment of ascites, we should remember that the condition may be due to two entirely different sets of causes, viz., cardiac, renal, or hepatic disease, and inflammation or malignant growths within the abdomen; the drain on the patient's vitality was quite different in the two cases.

DR. CHAMBERS said that he had seldom seen any harm follow an explorative incision in these cases.

THE PRESIDENT said that he had on several occasions been obliged to remove ascitic fluid by tapping in order to make a diagnosis in obscure cases of abdominal tumors, which proved to be multilocular ovarian cysts; and twice in cases of pyo-salpinx ascitic fluid had escaped on opening the abdominal cavity.

DR. WYLIE was sure that the fluid was more likely to return after tapping than when a permanent opening was established.

DR. COE believed that an erroneous opinion prevailed with regard to the harmless effect of explorative laparotomy in cases of suspected malignant disease of the abdomen. As far as his observation went, the patients began to go down hill rapidly after the operation, and in a large per cent of the cases they succumbed to the shock. He did not see any advantage in opening the abdomen in cancerous ascites, when the symptoms pointed strongly to malignant disease, and the diagnosis could be cleared up in the great majority of cases by the aspirator.

THE PRESIDENT mentioned the case of a young girl, aged seventeen, whom he had seen operated upon by Dr. Prochownick, in Hamburg. On opening her abdomen, the omentum and intestines were found to be studded with cancerous masses; there was profuse hemorrhage, which could only be controlled by rapidly closing the abdomen, but the patient made a good recovery.

DR. CHAMBERS believed that life was prolonged in many cases by resort to abdominal section, and that every woman should certainly have the benefit of the doubt.

DR. JANVRIN asked if he understood Dr. Wylie to advocate the explorative operation in patients with cancerous ascites when there was no doubt as to the diagnosis. In all such cases, especially in cancer of the liver, he always preferred tapping.

DR. WYLIE replied that he preferred explorative laparotomy to tapping.

DR. POLK thought that there was less risk in making an incision, now that antiseptics were used.

DR. WYLIE thought that in tapping there was great risk of wounding some vessel, or causing the rupture of an abscess into the peritoneal cavity; by opening the abdomen, the surgeon could see just what he was doing.

DR. LEE said that he had at the time two cases of ascites associated with malignant disease of the peritoneum, one of which was treated by repeated tapping, the other by incision and permanent drainage, a drainage-tube being kept in constantly. He had tapped the first case about a dozen times, and on every occasion he had found it extremely difficult to avoid wounding the nodules in the peritoneum. The case treated by drainage had certainly done better than the other.

DR. BALL (present by invitation) said that he had never had any trouble in tapping, but he was sure that the two cases in which he had employed permanent drainage had terminated fatally (in consequence of peritonitis) sooner than if they had been let alone; his experience was confined to ascites of hepatic origin.

SPECIMEN OF UNILOCULAR OVARIAN CYST—LAPAROTOMY DURING
AN ATTACK OF PERITONITIS—RECOVERY.

DR. HANKS showed the sac of an ovarian cyst which he had removed fifteen days before. The following is a brief history of the case: Miss S., æt. 22, had an attack of peritonitis six months before, and said that she had had a similar one several years previously. I saw her for the first time on November 2d, 1886, and found her presenting all the symptoms of general peritonitis. The pain was relieved by opium, and the temperature reduced by antipyrin. She was convalescent at the end of a week, but was obliged to take half an ounce of McMunn's elixir daily for

another week because of the intense pain. As soon as the tympanites and tenderness had subsided, there was no difficulty in detecting a cystic tumor that extended almost as high as the umbilicus. Dr. Thomas, who was called in consultation, agreed with me regarding the nature of the growth, and the advisability of early operative interference. The operation was performed in December. The peritoneum was so much congested that its identity was doubtful for some time. The cyst was slightly adherent to the anterior parietal peritoneum, but was easily detached, its contents being siphoned out through a hard-rubber tube of the Tait variety. The peritoneum, fascial sheath and muscle, and the integument, were closed separately with catgut sutures, a single silk suture being introduced at the middle of the incision, and including all the tissues down to the peritoneum. The patient had a normal convalescence, and is ready to sit up. The interesting point about the specimen is the unusual thickness of the cyst wall; when first removed, it must have measured an inch and a quarter at several points. The peritonitis was probably due to the extension of a localized inflammation from the pedicle of the cyst, which was slightly twisted. There was no fresh peritonitis after the operation, but the patient recovered from it more quickly than from the previous attacks of inflammation; she had required less opium during the two weeks that had elapsed since the operation than in half a day previous to it.

DOUBLE DERMOID CYST REMOVED BY LAPAROTOMY—RECOVERY.

THE PRESIDENT showed two dermoid cysts removed from a patient *æt.* 47. An enlargement in the left hypochondrium was first noticed seven years before, which grew rapidly until it reached its present size. Last March an attempt at removal was made by another operator, but extensive adhesions induced the immediate closure of the wound. On opening the abdomen the second time, a tumor was found with a long pedicle attached to the ovary; the growth itself was firmly adherent to the anterior abdominal wall, omentum, and intestines. It had probably been pushed upward during a former pregnancy by the growing uterus, and had become fixed in its new position. The second tumor was loose in the pelvis and was easily removed. Both tumors contained large tufts of hair, bone, and fatty matter. The occurrence of two dermoid cysts in the same subject was rare, only a few cases being mentioned by Olshausen.

Drs. Janvrin and Polk each reported a case of double dermoid cyst.

CASES OF MELENA NEONATORUM.

DR. FOWLER reported two cases, the following being brief histories:

Case 1 -- Frank K., born March 24th, 1886. Mother, Ipara. Family history: father and mother healthy, but when 17 years

old, "she spit up a large quantity of blood." She first menstruated when 18 years of age. Pregnancy normal. Labor normal; first stage, thirteen hours; second stage, one hour. Child well nourished; weight, six pounds eleven ounces; nursed well and nothing unfavorable was noticed until thirty-six hours after birth, when the infant refused to nurse; one hour afterward it commenced vomiting blood, the vomiting being followed by profuse hemorrhage from the bowels, estimated at one-half ounce, followed during the afternoon by *three* other hemorrhages; the second about the same quantity of blood as at first, the third and fourth about two drachms; vomiting continued, and there were slight hemorrhages during the nights of 26th and 27th. The vomiting of blood continued until 7 A.M. 27th; at 2 P.M. the infant commenced nursing, and continued to improve, and finally recovered.

Case 2.—Howard B., aged two and a half days. Mother a healthy, well-developed mulatto, 25 years of age, and a primipara. Mother's family all healthy; no cases of hemorrhage remembered. Father healthy; family history unknown. First stage of labor, six hours ten minutes; second stage, ten minutes. Presentation, vertex. Position, R. O. A. Child born November 30th, 4 A.M. Weight at birth, nine pounds eight ounces. Condition apparently normal, except a slight swelling above and in front of the right ear, with discoloration of the integument. December 1st, 7 A.M.—severe hemorrhage from the umbilicus, followed during the day by two slight attacks of epistaxis. Eleven P.M., oozing commenced from the navel, most marked at the line of separation from the integument. This continued, with short intermissions, until the patient died at 4 P.M., December 2d. Weight after birth, eight pounds nine ounces. Post-mortem revealed paleness of all the internal organs, a quantity of blood in the abdominal and thoracic cavities, and bloody serum in the pericardium. There was profuse infiltration of blood in the mesentery, under, and in, the pectoral muscles, scalp, and throughout the lungs. The brain presented no evidence of hemorrhage. Nothing was found to account for the bleeding, no embolism or changes in the mucous membrane of the stomach or intestine.

DR. JACOBI remarked that hemorrhages in the new-born were of quite frequent occurrence, since the walls of the blood-vessels were very thin. Bleeding in an anemic child was due to malnutrition of the vessel-walls. In melena, the changes might be local, due to embolism (from delayed closure of the duct of Botallus) or constitutional, as in purpura, leading to fatty degeneration of the vessel-walls. He recalled a case in which this fatty degeneration was so marked that the fetus came apart when traction was made upon it in a breech presentation.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Thursday, December 2d, 1886.

E. E. MONTGOMERY, M.D., *Vice-President, in the Chair.*

FIBROID TUMOR OF THE BROAD LIGAMENT.

Dr. W. Constantine Goodell exhibited for Dr. W. GOODELL the right broad ligament containing an enlarged ovary, and close by its side, but distinct from it, a fibroid tumor of the shape and size of the non-gravid womb. The left ovary was also greatly enlarged. It contained a cyst which burst into the cavity of the abdomen while the woman was being examined, four days before the operation, which took place in Dr. W. Goodell's private hospital on June 22d, and she recovered promptly. Her symptoms were painful and feeble locomotion, constant ovarian pains, menorrhagia followed by prolonged dribblings of blood, and a retroversion which could not be rectified on account of the tender and dislocated ovaries. She had been under treatment for several years and without benefit, but since the operation she had greatly improved.

He also exhibited for Dr. Goodell an

INTRA-LIGAMENTOUS OVARIAN CYST.

with the following history: The girl, aged 18, had been growing large for two years, and her health also began to fail, but a tumor was not suspected until six months ago, when she was examined by Dr. George H. Woods, of Pine Grove Mills, Pa. Discovering a cyst, he sent her to Dr. Goodell. The operation was performed on September 25th at his private hospital, and was a difficult one, because most of the cyst lay between the folds of the right broad ligament, and the rest of it was adherent at every point to intestines and abdominal wall. It was enucleated so completely that no pedicle was left to tie. He exhibited it mainly to show the greatly hypertrophied and dilated oviduct, the walls of which are very thick, and were filled with pus. The left ovary, being of the size of a goose's egg, was also removed. It contained pus, and also was enveloped in the broad ligament and had to be shelled out. In spite of the complications, this case recovered promptly. Dr. W. Goodell had had during the past year another case of intra-ligamentous cyst of the most formidable character. The cyst was attached to nearly the whole of the colon, to the small intestines, to the bladder, and to the whole surface of the womb, measuring five inches in length. The lower portion lay between two layers of the broad ligament, from which it was shelled

out without a pedicle. The parts were so disorganized that the second ovary could not be found, nor was it possible to determine positively which ovary was removed. But the presumption is that it was the right, because nearly the whole of the right ureter (fully ten inches of it) had to be carefully dissected off from the cyst wall and from between the layers of the broad ligament. Many ligatures were used, and very little blood was lost, but the patient died on the table from shock while the wound was being closed. Before this death, Dr. W. Goodell had had twenty-two successive ovariectomies, all of which recovered, and he has had eight successful cases since, making in all thirty cases with but a single death.

DR. JOHN M. TAYLOR, upon invitation from the Chair, remarked that the first case reported by Dr. Goodell had been originally under his care. He had attended her in labor, and nothing abnormal occurred in the puerperal period. He had examined her six weeks later, as is his custom, and found nothing wrong. Some months afterwards, she had a miscarriage; there was some placental retention, and it was followed by ovarian tenderness and signs of inflammation which gradually increased; the ovaries became enlarged. Nine months after the miscarriage, the operation was performed. An interesting question is, When did the tumor begin?

DR. MONTGOMERY remarked that there was a resemblance between the tumor and one horn of a uterus bicornis. Was there a distinct separation between the uterus and the tumor, or could it have been such a horn?

DR. W. C. GOODELL stated that the tumor was separated from the uterus by an inch. The tumor has greatly diminished in size since it was placed in alcohol.

DR. HOWARD A. KELLY exhibited a

PAROVARIAN CYST

weighing thirty-seven pounds. The patient, a young woman, nulliparous, had noticed the tumor one year before. The character of the percussion wave and the evenness of the belly wall decided a correct diagnosis. A point of interest was the flatness of the anterior abdominal wall, with more fulness in the flanks than the speaker had ever before observed in a cystic tumor. The tumor was removed through a two-and-a-half-inch incision. The fluid was viscid and yellowish. There were no adhesions. The broad pedicle was transfixed and tied, and over this a tie made embracing the whole. The wound was closed by silkworm-gut sutures, five to the inch, and the whole operation completed in thirty-six minutes.

It is two weeks, to-day, since the operation. The patient is sitting up in a rocking chair. She had no fever at all; a pulse daily growing slower, and felt well. The cyst was one large cavity containing several cauliflower vegetations on its inner wall. The ovary lay intact on its outer wall, and the tube, about ten inches in length, was drawn out over it.

REMOVAL OF OVARIES AND TUBES FOR SUBINVOLUTION AND CHRONIC METRITIS.

DR. KELLY considers the indications in this case so well defined and new that he designs making it the subject of a more detailed critical communication. The patient, about 35 years of age, had raised five children, but for several years had suffered from constant soreness of the whole hypogastrium, a spot of intense burning pain to the left of the uterus, and a constant dark leucorrhœa. The menstrual congestions greatly increased her symptoms, which were again aggravated by several early abortions. She had been under excellent treatment before coming to Dr. Kelly, and had been carefully treated by him, but with only moderate, temporary improvement. Dr. Kelly then decided to stop the menstrual function, with a view to checking the periodical determination of blood to the uterus, and finally bringing about complete involution of the organ. The operation was performed on the same day as that before described. The ovaries and tubes were removed through an incision two inches long. The ovaries were full of pea-sized follicles, and were covered with a dense capsule, and were probably (not, however, in consequence of these appearances) diseased. The speaker insisted that the operation here had no reference whatever to any disease which might be found in the appendages, but the sole indication lay in the state of the uterus; the ovaries, whether diseased or not, were removed to correct that trouble. The recovery was as perfect and free from disturbance as any slight injury, and the patient was up in the next room on the fourteenth day, when the uterus was free from tenderness and already rapidly undergoing involution.

DR. HARRIS considered the parovarian cyst interesting on account of the character of the fluid, which was opaque, and quite as thick as is usually found in ovarian cysts.

DR. CHAS. MEIGS WILSON considered oöphorectomy a resort of doubtful propriety as a remedy for metritis; for, as the menopause occurring physiologically would not stop such an inflammation, we would scarcely expect it to be of greater benefit when the result of an operation. He doubts the moral right of exposing the patient to the risks of abdominal section for such a condition.

DR. KELLY remarked that one reason for the operation for the relief of metritis was the exacerbation of all the symptoms at the menstrual period. Maternity could not again be accomplished in consequence of abortion; complete rest in bed had failed to stop them. He thinks these ovaries are diseased; ovaralgia has undoubtedly some anatomical basis, but he is not able to say how it is to be discovered; more microscopical research is needed. The history of this case excluded syphilis.

DR. Joseph Price read a

REPORT OF THIRTY-ONE CASES OF INTRA-ABDOMINAL OPERATION, done without any selection in private hospital, by DR. R. STANSBURY SUTTON, of Pittsburg, Pa.—October 27th, 1883, Mrs. B.,

ovariotomy, large cysts; recovered. November 18th, 1883, Mrs. O., ovariotomy, large cyst; recovered.

December 28th, 1883, Mrs. C., ovariotomy, large cyst, extensive adhesions, tapped frequently; recovered.

February 2d, 1884, Miss T., supra-vaginal amputation of uterus with both ovaries and tubes; recovered.

February 20th, 1884, Miss P., supra-vaginal amputation of uterus with both ovaries and tubes, large fibroid of uterus; recovered.

March 20th, 1884, Mrs. K., ovariotomy, left ovary large and cystic, developed under the broad ligament, and roofed over by it. The ligament was opened up to get at it. On right side a fibro-cyst of the uterus with adhesions existed. Performed supra-vaginal amputation of the uterus with the remaining ovary and tube, and split the broad ligament of the left side; recovered.

April 22d, 1884, Mrs. S., ovariotomy, large cysts, extensive adhesions especially to the liver, had been often tapped. Liver was burned with cautery iron over strip one inch broad by four or five inches long to stop bleeding. Incision in abdominal wall seventeen inches long; recovered.

May 12th, 1884, Mrs. D., large sarcoma of left ovary; general chronic peritonitis with ascites; tumor fed by enormous vessels. Pedicle tied and dropped as in ovariotomy. Pulmonary clot occurred on fourth day suddenly with temp. 99°; died.

May 29th, 1884, Mrs. G., ovariotomy, large cyst, adhesions; recovered.

June 24th, 1884, Mrs. S., pelvic abscess; Tait's op. (the pus was stinking); recovered.

July 12th, 1884, Miss M., removal of sub-peritoneal fibroid, anterior wall, pedicle short; recovered.

July 12th, 1884, Mrs. L., supra-vag. amputation of uterus with sixteen-pound fibroid, extensive enucleation, adhesions numerous; died.

September 16th, 1884, Mrs. R. (insane), removed both ovaries and tubes—cured; recovered.

September 22d, 1884, Miss J., both ovaries and tubes removed. Died of septicemia on fifteenth day. (Consultants pronounced it typhoid fever.)

September 24th, 1884, Mrs. W., supra-vaginal amputation of uterus and both ovaries with fifteen-pound fibroid; extensive enucleation, vast adhesions; tetanus; died.

December 4th, 1884, Mrs. C., supra-vag. amputation of uterus for large fibroids; extensive intestinal and mesenteric adhesions, and in the presence of peritonitis; very bloody operation; shock was too great; died. December 14th, 1884, resection of small intestines at two points for cure of artificial anus and extensive adhesions of gut, fatal on seventh day from renal hemorrhage. Five stones, one an inch long, were found in the kidneys post mortem. The points of resection were found with difficulty,

the sutures were all covered. (My first and only other resection of intestine recovered and is living, three and a half years since operation.)

March 7th, 1885, Mrs. J., ovariectomy, large cysts, extensive adhesions, had often been tapped; recovered.

April 7th, 1885, Miss S., exploratory incision; recovered.

June 10th, 1885, Mrs. L., double ovariectomy; dermoid on right side; recovered.

June 27th, 1885, Miss H., both ovaries and tubes removed; recovered.

July 30th, 1885, Miss D., ovariectomy, large cysts, extensive adhesions, came in a dying condition, had been tapped very often; died.

November 18th, 1885, Mrs. B., ovariectomy, incomplete small cyst, size of cocoanut. As it was impossible to remove the cyst on account of adhesions, it was emptied, dried out, and lining well mopped with a five-per-cent carbolic. Recovered, and cyst has not refilled.

November 19th, 1885, Mrs. M., oöphorectomy, right ovary and tube; recovered.

November 24th, 1885, Mrs. W., double ovariectomy, large cysts, bad adhesions, patient very anemic and feeble, had been tapped often. Recovered from operation, but died from peri-nephritic abscess three months afterwards.

January 9th, 1886, Mrs. N. G., oöphorectomy, pyo-salpinx; recovered.

March 23d, 1886, Mrs. R., oöphorectomy, right ovary and tube; recovered.

April 3d, 1886, Mrs. N., oöphorectomy, both ovaries and tubes, kidney contracted. Uremic poisoning a week after operation; coma; death.

October 1st, 1886, Miss S., oöphorectomy, right ovary and tube, chronic ovaritis and salpingitis. Had to dig the ovary and tube out of a mass of adhesions, bad case; recovered.

November 20th, 1886, Mrs. N., double ovariectomy, removed large parovarian cyst and cystic ovary on left side and cystic ovary on right side; recovered.

This list of thirty-one abdominal sections are all I have made in my private hospital during the three years of its existence. I have never used spray over a wound, and only occasionally in my earlier cases. I used two and a half per cent carbolic solution over the instruments. Long ago I quit this and have used no chemical during the operation. After closing the wound, I am in the habit of dressing it with iodoform gauze. Our wounds all heal by first intention. A great many of these patients had neither health, strength, nor money when they came to us. Rich or poor, all have had the same chance for life. All the provisions of cleanliness known to science and art are practised in my in-

stitution. With our present good condition, I believe we can save ninety eight per cent of ovariectomies sent within a year or eighteen months from the time the disease begins, and without having been tapped. We never lose a case if in fair condition, and if no trocar has been previously introduced into the cyst.

In this list there were thirteen ovariectomies for large cysts, and in one case a supra-vaginal hysterectomy was also done. Of these thirteen cases two died, one of the two three months after operation, and the other was in the last stages of exhaustion when she was brought in on a stretcher.

Of the cases of supra-vaginal amputation of the uterus and both ovaries there were six; in one an ovariectomy was done for large cyst. Of these cases, three recovered and three died.

The Tait operation for large pelvic abscess recovered.

The intestinal resection was not lost through the operation. The removal of the uterine appendages shows a mortality of two cases; one was due to operation I think, the other was not.

I am sure that, as we gain experience in further operative work, and exercise more care in rejecting cases with bad kidneys, our results here will compare favorably with others. Thus far we have refused no patient willing to enter the list for operation, and I am sure that no operator, East or West, is likely to meet with worse cases than are contained in this list.

Summary: Ovariectomies, McDowell operations, 13.

Oöphorectomies, Hegar-Tait operations, 8.

Laparotomy for pelvic abscess, Tait operation, 1.

Resection of intestine, 1.

Removal of large solid sarcoma of ovary, 1.

Supra-vaginal amputation of uterus and both ovaries, 6.

Exploratory incision, 1.

Removal of sub-peritoneal fibroid of uterus, 1.

(One case is counted twice; first, as ovariectomy for large cysts complicated with supra-vaginal amputation for fibroid cyst of uterus; second, as a supra-vaginal amputation of uterus complicated by ovariectomy.)

In looking over my ovariectomy cases who have recovered during the last ten years, I find that eight children have been born to them. My last laparotomy (forty-sixth) was a large parovarian cyst, with both ovaries cystic. The cyst and both ovaries were removed through a two-inch incision, the dressing completed, and the woman in bed, in thirty minutes, without any haste. She has taken no drugs, not a drop of anything. Temperature on the fourth day was normal, and pulse 76. Wound completely healed. Experience with honest precautions, coupled to a possibility of earlier operations, and a discontinuance of tapping will result in as good statistics in this country as abroad.

DR. H. H. KELLY remarked that Dr. Sutton's account of his

cases is very interesting, and in many particulars instructive, and better results for general work, handling all classes of cases without selection, certainly cannot be found in our country. He, Dr. Kelly, called especial attention to the note by Dr. Sutton that his ovariectomy patients had borne eight babies within the past ten years. This fact is significant as deciding a question which has been discussed in terms of vague generalization and sentimentality. "The other ovary."

About a year ago, when writing a paper upon ovarian cysts of large size, Dr. Kelly found facts in Sir Spencer Wells' table which determined this question for him upon a solid scientific basis. Of Sir Spencer Wells' 1,000 cases, 768 recovered, and deducting from these 343 over 40 years of age or beyond the child-bearing period, we have left 371; again deducting 20 more which was about the number of double ovariectomies under 40 years, recovered, we have left about 351 women survivors, with one ovary and in a child-bearing condition. As an actual fact 117, or about one-third, did bear children to number 228, or a fertility of about sixty-five per cent to the total number of survivors. This is then clearly the advantage of leaving one ovary in 351 women, to wit, 228 children. Now what are the disadvantages? Obviously a return of the tumor in the other ovary, and death from the second operation.

In seven of these three hundred and fifty-one women, a second operation was necessary, and one of the seven died of a tumor doubtfully uterine.

Here, then, is the status of "the one ovary" case. *One doubtful death* of a woman seven years after her first operation, against *two hundred and twenty-eight children born!*

Dr. Kelly could not accept the diagnosis of death from typhoid fever in a surgical case within three weeks of operation, in the absence of careful post-mortem examination. The typhoid condition is so common in all cases of peritonitis tending to a lethal end, and true typhoid fever so extraordinarily rare, that he rejected the diagnosis not subsequently confirmed. It savors too much of the many cases of women coming to my office week after week who tell me they "have never been well since their last confinement, when they had typhoid fever." Dr. Sutton, however, does not himself make this assertion.

DR. COFFEE, of Pittsburg, drew attention to a case under his own observation in which typhoid fever of distinct character followed close upon a surgical operation.

DR. M. PRICE spoke of a case in which typhoid fever followed immediately after an attack of small-pox.

DR. JOSEPH PRICE reported a case of

HYSTERECTOMY FOR MYOMA.

The patient had applied to Dr. J. R. Haynes on account of menorrhagia with hypogastric discomfort. Uterus about the size of a three-months' gravid uterus. She became very much prostrated, and suffered from sciatica in the right leg. The tumor grew rapidly, and seven months after first seeing her, the tumor was found to extend from the umbilicus to the perineum, resembling in shape and position the gravid uterus at seven months. Two inches below the umbilicus and to the left, a bruit was distinctly heard. Fetal

heart sounds could apparently be distinctly heard beating one hundred and twenty-five per minute, but they were synchronous with the patient's pulse. The lower portion of the tumor extended into the vagina almost to the perineum, and resembled very much a fetal head surrounded by a small quantity of fluid. The os uteri could be felt only with the utmost difficulty behind the centre of the os pubis.

Nov. 19th, Dr. J. Price performed abdominal section: before operation her pulse was 150 and temperature 100°. Six syringefuls of brandy were given hypodermically. The operation lasted about an hour. The patient slept well that night, and improved in condition for a few hours, after which vomiting occurred, followed by great restlessness, pain, and increased frequency of pulse. Peritonitis developed, and the patient died at 7 A.M., about thirty-one hours after the operation. Post-mortem examination showed nearly a pint of bloody serum in the peritoneal cavity.

Dr. Price remarked that, in reviewing the operation, he felt that, with one exception, he had nothing to regret, but he did regret that he had not introduced a drainage tube; his reason for not using it was the complete absence of bloody stain in the last abdominal washings; but it is his rule to use a drain whenever there have been adhesions to separate. He had three tubes in use in other patients at that very time; he feels assured that, if he had used a drainage-tube in this case, the woman would have recovered.

DR. H. A. KELLY considered the important error in this case was the neglect to insert a drainage-tube, and gladly made this subject the text of a few remarks. Operators at large should by this time have reached a common understanding as to just how and when the drainage-tube should be used. In the *first* place, whenever there is any denuded area as large as the palm of the hand or smaller, if there be a tendency to weep, a tube should be introduced, and sometimes, when least expected, several ounces of serum will well up through the tube daily, and the absorptive powers be saved a severe tax. *Second: Whenever in doubt, use the tube:* no harm ever comes from it when guarded with the antiseptic precautions now in common use.

His own plan is as follows: Pass all the silkworm sutures as if the whole length of the incision were about to be closed. Slip in the draining-tube (he prefers a straight glass one, under ordinary circumstances) and run down the shot and close the wound to the tube, but the two sutures passing through the track of the tube are left long, to be used after removal of the tube. He then, once or twice a day, draws out all serum accumulated in the pelvis by means of a long nozzle uterine syringe; when all discharge has ceased, provided it has been but sweet, clean serum, he withdraws the tube, and running the shot down on the two unused sutures, closes the wound perfectly, leaving only a linear cicatrix instead of a deep pit at the lower angle to be filled up by granulation and a large plug of scar tissue; this is also safe after suppuration, provided all suppuration has entirely ceased.

He does not like Koeberlé's clamp, which had been used by Dr.

Price in this case, and considers it far more dangerous in every way than the elastic ligature. Säger's device, just announced, combining an extra- and intra-peritoneal treatment, promises much and is certainly destined to repeated trial.

DR. MONTGOMERY thought the case one of extreme interest in point of diagnosis and treatment. The pressure of the tumor on the ureters causes changes in them, and also sacculation of the kidneys. He had operated in a similar case some years ago, and subsequent examination revealed sacculated kidneys and pus in one; even if no knife had been used, the patient would have died from the ether. He thinks, with Dr. Price, that the drainage-tube should have been used in his case.

DR. JOSEPH PRICE remarked that he had no fear whatever of the drainage-tube, and thought it might be used in every case. Tait's rule, "when in doubt use the tube," was a good one. Dr. Price made some remarks upon his method of using drainage-tubes of glass, using cotton wick in some cases to remove accumulations of serum and to clear the openings of the tube, using a sucking bulb with gum tubing to draw out fluid accumulations, and introducing a smaller gum tube through the glass one before withdrawing the latter.

DR. M. PRICE exhibited specimens from a case of

PYO-SALPINX OF GONORRHEAL ORIGIN.

Is pyosalpinx not generally or always the result of gonorrhea? His cases have, without exception, followed attacks of gonorrhea. Can such a sequel be anticipated and prevented?

DR. MONTGOMERY remarked that Dr. Noeggerath initiated the idea of latent gonorrhea as the cause of salpingitis and pelvic peritonitis.

DR. M. PRICE remarked that his patients had been in robust health; they were generally women who had borne but one child, and the labor had been followed by repeated attacks of peritonitis.

DR. LONGAKER read a report of a case of

LAPAROTOMY FOR PYO-SALPINGITIS.

Maggie T., aged 33, was admitted to Lying-in Charity Hospital, November 13th, 1886. She had one child eighteen years before, after a difficult and prolonged labor. Unmarried, and has a history of specific disease. During the last four years, her periods have been accompanied by intense suffering, and in the intervals she was never free from distressing aches in the pelvis. Lately she had used opium to some extent. In addition to the evident enlargement of the appendages on both sides, the patient has a perineo-recto-vaginal fistule and a stricture of the lower end of the rectum. A diagnosis of pelvic cellulitis was made by him in this case two years ago. *Operation*, Nov. 18th. The left tube, a sausage-shaped tumor, and the ovary, a fluctuating mass the size of a walnut, were easily removed; a small amount of pus escaped from the end after ligation, but this was arrested by pressure forceps. The ligature was necessarily passed near the uterus, but owing to friabil-

ity of tissues, troublesome oozing continued and delayed the closure of the abdomen. On the right side, the ovary and tube formed a huge abscess the size of a goose-egg. It was impossible to separate and remove this without rupture. It was filled with pus and altered blood; adhesions were dense and firm. There was also some oozing on this side, but it gave rise to comparatively little trouble. The peritoneal cavity was irrigated with hot water; one to five thousand bichloride solution on sponges; abdominal walls sutured with silk, over which was placed an impervious coat of iodoform collodion. Convalescence uneventful. She is now free from pain.

DR. M. PRICE inquired about the source of hemorrhage. He had seen serious hemorrhages due to the fact that the tube was cut by the ligature. He thought it important to tie straight across the tube and not obliquely. He ligates by double ligature and ties back. He considers it right to open up at once if hemorrhage is at all free; he does not think it right to trust to sponges and hot water.

DR. JOSEPH PRICE had seen very few hemorrhages from adhesions to the bowels, large sinuses being laid open and pouring out blood. In several cases he had used iron as a styptic.

DR. LONGAKER explained that the hemorrhage came from the opening up of the broad ligaments.

DR. H. A. KELLY read a paper embracing

NOTES ON PALPATION OF THE FEMALE URETERS,

which will be published in full with diagrams.

DR. JOSEPH PRICE read an interesting letter from Dr. Joseph Eastman, summarizing the features of McDowell's early operations, showing how perfectly antiseptic his work was.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, October 1st, 1886.

DR. A. F. A. KING, *President, in the Chair.*

The President, DR. A. F. A. KING, delivered the

ANNUAL ADDRESS,

of which the following is a portion:

Since the main purpose, after all, of scientific bodies like ours is to advance our knowledge of the subjects with which they have to do, and to improve and extend the practical results deducible therefrom, it might be well to inquire in what directions such improvements seem to be most needed, and what are the questions

that in the future will arise for the obstetricians and gynecologists to solve.

In nearly all scientific investigation, the present era ever *appears* to be a stopping-place beyond which it seems impossible to go. We look round us and can think of nothing new to invent, no new fact to discover, no new principle to expound, and yet the next decade opens up new paths through hitherto unexplored regions of thought that are abundantly fruitful in new methods and rich in practical results.

It is difficult to indicate in what directions these new paths lie, but I suppose they are most often made evident by a thoughtful consideration of existing necessities. Recognizing our needs is, perhaps, the initial step towards supplying them. What, then, are some of these needs that the thought of the future may provide?

It requires but little reflection to reach the conclusion that we certainly need more exact information than we at present possess on many subjects that are exceedingly familiar, but nevertheless quite unsettled and apparently likely to remain so. Witness, for example, the management of the perineum, with a view to prevent its rupture during labor, a thing that every midwife ought to know, and yet the most learned and skilled obstetricians differ materially from each other, as to what is the best method—or best methods in different cases—of effecting this purpose.

Think again of the diverse and indeed opposite opinions that are presented by teachers and writers of authority on the almost every-day matter of mammary inflammation and abscess, and of treating them when they have occurred—a matter, every one would think, that ought to have been settled centuries ago.

The same diversity of opinion exists with relation to the utility and best methods of applying the obstetric binder.

With relation to the usually simple matter of delivering a placenta, we are again in doubt as to what, in normal cases, constitutes the *best* method of proceeding. The conventional dose of ergot that used to be given a few minutes before the birth of the child to expedite expulsion of the after-birth is now interdicted, because in some cases it is found to produce hour-glass contraction of the womb and consequent *retention* of the placenta. So again, the much admired method of expression by Credé has of late been arraigned before the bar of professional opinion. Should we inquire how long the placenta ought to be permitted to remain undelivered in a normal case—keeping in view the interest of the child as well as that of the mother—again we encounter the same diversity of opinion.

Even with regard to ligating the funis, especially since the experiments of Budin, the proper *time* for tying it, and considering the interests of the child, is again unsettled.

So, too, nearly every one has his own special method of dressing

the navel string, and there seems even yet to be some difference of opinion as to whether a bandage round the abdomen of a new-born child *is*, or *is not* advisable!

In this connection, the causes and pathology of icterus neonatorum, and whether it be in reality a derangement of the liver (as I think must be admitted at least in those cases accompanied with bile-tinted urine and white-clay colored stools), or only a disease or contusion of the skin as other writers assert, presents itself as a question well worthy of consideration.

Again, I think we need more exact information than we at present possess, with relation to the actual danger of admitting air into the uterine cavity during or soon after labor. Certainly some further study of this matter would seem to be required before we can reconcile the apparently conflicting statements of so eminent an authority as Prof. Lusk, who, while stating (p. 638, Third Am. Edit.) that the entrance of air into the cavity of the uterus must of necessity do harm, and that while the harm may be limited to the production of endometritis, there are cases where the aspiration of air has been followed by instant death, yet on another page (226) of the same work, he distinctly avers that in certain cases where traction on the cord has deranged the mechanism of placental delivery, so as to completely occlude the cervix uteri, "it may be found *impossible* (*italics mine*) to effect delivery without first introducing two fingers, and hooking down the margin of the placenta, so as to *allow air to pass into the uterine cavity*." Are then our various methods of placenta delivery, after all these years, so sorrowfully impotent that, in the cases referred to, delivery is "*impossible*" without resorting to a proceeding that has been known to produce instant death? There seems to be here, I think, some room for the reconsideration of the question suggested.

And another matter of interest, nearly related to this one, is the question of diagnosing whether a retained placenta be or be not adherent to the uterine wall. Without recalling the familiar method by which such a diagnosis is usually attempted, I cannot refrain from calling your attention to a statement from another distinguished obstetric authority, Dr. Alfred Meadows, of London, who, in the fourth edition of his well-known manual (p. 193), writes: "There is, however, one almost unfailing test by which we may judge when the placenta has become detached from the uterus, and consequently when it may be removed, even though still in the uterine cavity, . . . the test in question is the presence or absence of pulsation in the cord, for while it remains attached to uterus, the pulsation will still be felt," etc.

Now, while we may not venture to question the accuracy of so eminent an observer, I cannot but think this statement requires some qualification or explanation. Is the pulsation that he feels a maternal or fetal one? If a maternal one, it must, of course, be

propagated from the maternal half of the placenta to the fetal half, and thence along the umbilical vein. Assuming, therefore, that such a venous pulse may coexist with that of the fetal heart propagated along the umbilical arteries, how shall we distinguish or isolate, with the finger, one from the other? Still again, if pulsation indicates, almost unfailingly, that the placenta is still adherent, the converse ought also to be true, viz.: that when the placenta is separated from the womb, pulsation in the cord instantly ceases. For my own part, I am at a loss to understand or practically appreciate this statement of Dr. Meadows. Who of us has not continued to feel the fetal pulse in the funis, even when the placenta was in the vagina, or completely expelled from the vulvar orifice?

Strangely inconsistent with this statement, Dr. Meadows (on page 395), while discussing the diagnosis or morbid adhesion of the placenta, says that "the actual diagnosis can *only* (italics mine) be determined by a digital examination, when, on introducing the hand into the uterus, and feeling for the edge of the placenta, it will be found still closely attached," etc. Here he makes no reference whatever to pulsation in the cord as a means of diagnosis.

Among other matters that may be mentioned as specially deserving our future consideration are: the relative value and best mode of using the several antiseptics—carbolic acid, corrosive sublimate, iodoform, mercuric iodide, iodine, etc.—now employed in obstetric practice.

The question of posture during delivery, and the changes of position on the part of the female that may be advisable under different circumstances, is, I think, an exceedingly interesting one. And I may be excused, perhaps, for again commending to your consideration the influence of coiled or short funis in the prolongation of labor, and in the production of actual dystocia and tedious labor. Furthermore, the etiology of this frequent abnormality ought to receive more thought than has hitherto been bestowed upon it.

Again, I think there is ample room for improvement in the construction of obstetrical instruments. Notwithstanding the very numerous varieties and modifications of the obstetric forceps, including the recent valuable axis-traction forceps of Tarnier and others, we still need a contrivance which, in cases of contracted conjugate diameter, or of long bi-parietal diameter of the head, shall grasp the head, not laterally so as to widen it in the very antero-posterior direction where space is already lacking, but in the antero-posterior direction, *i. e.*, between the pubic symphysis and sacral promontory, and which shall enable the operator to oscillate the head so as to increase or diminish the obliquity of Nægelé, as circumstances may require. Moderate ingenuity might, I think, readily devise such an instrument, shaped somewhat like a Contonley's pelvimeter, or a lithotribe, and arranged so that each

blade should consist of a sort of double prong, one going on each side of the sacral promontory behind, and one on each side of the symphysis pubis in front—the posterior blade having its curve adapted to the hollow of the sacrum, the anterior, shorter and straighter, blade fitting the posterior surface of the pubis.

So again, in cases where rotation of the head has failed to take place, a special instrument, perfectly adapted to grasp the head while in this oblique or transverse position, should be provided. The custom of applying the ordinary forceps in such cases, whether the blades be made to follow the sides of the pelvis or the sides of the head, is cruel, inexact, and unscientific. If, in so small a matter as pulling teeth, the dentist employs a different forceps for almost every tooth, it seems strange indeed that the obstetrician, in so important a matter as delivering a child, should be content with one instrument, even though the head present obliquely, transversely, or in the antero-posterior direction.

These are a few of the many topics of an obstetrical character that occur to me as being specially deserving of our future study. I believe the questions they present will find their solution, if at all, only by our attaining a more exact and comprehensive knowledge of the truly natural processes that in their totality make up the function of normal reproduction in all of its various stages. As we understand Nature better, we shall the better be able to discover the causes which produce deviations in the normal functions, and to correct these obliquities by the assistance of art.

Turning now for a moment to the domain of gynecology, we here also find a host of questions that are just as much unsettled as those of an obstetrical character to which I have just referred.

And first of all with relation to the pathology of uterine and ovarian diseases: Why is it that so many women are afflicted by them? Who can explain the cause of cystic degeneration of the ovary, or of the inflammatory element that may be alleged to precede and produce it? What has happened to this cradle of human germs—this granary of embryos—that it should thus degenerate into a sac of serum? The discovery of the cause of ovarian disease, and of the means that shall prevent its occurrence, may be a less brilliant and less lucrative achievement to the gynecologist than the operation of cœphorectomy, but it would be no less humane to suffering women, and no less creditable to the gynecologic art. In the direction of this prophylaxis seems to be one of the paths along which future investigation will find ample room for earnest effort and profitable labor.

And the same may be said with regard to the etiology of uterine disease. We are about as much "in the dark" to-day touching the cause of fibroid degeneration of the uterine walls, or at least of the inflammatory element that may be alleged to precede or produce it, as we were a hundred years ago. What has the uterus done that its muscles and vessels should be thus transformed into lumps

of gristle? There must have been a deviation from the line of normal function somewhere, and which it behooves us, if we can, to discover. It is again, in my opinion, only by a more perfect knowledge of the physiology of these organs that we shall ever reach a correct understanding of the etiology and pathology of their diseases, and from which alone can follow effective prophylaxis.

While it is not my business here to attempt the solution of the several problems suggested, I have sometimes thought it might contribute to further our knowledge of uterine and ovarian pathology if, with less delicacy than has hitherto been customary, we paid more attention to the sexual function and to the influence of its abnormal exercise; or, in the case of single women, of its successful or unsuccessful repression; or again to the influence of ungratified or artificially gratified sexual desires as factors in the production of the diseases of women. The extreme delicacy, or rather indelicacy, of this kind of investigation has perhaps caused it to be too much neglected or put aside; but, if it can be shown to promise any profitable result, the science that is armed with a humane purpose should no longer hesitate to make the effort, even though it dismantle a veil of modesty in doing so.

With relation to uterine displacements and their treatment by mechanical supports, I think it may be said nothing in the whole field of medical practice is more unsatisfactory. So long as the womb is of normal size and weight, without any binding adhesions of peritoneum, cellular tissue, or shortened ligaments, and not suffering from any pressure from above, we may, it is true, afford sometimes immediate relief by a properly adjusted pessary. But even *then*, the patient, instead of being cured, is simply wearing a temporary artificial appendage, the subsequent removal of which may leave the case either no better, slightly improved, or, possibly, worse than it was in the beginning.

The management of uterine displacements, or, what is better, their prevention, constitutes, therefore, another problem to which the gynecologist of the future may well devote attention.

And what shall we say as to the cure of the various forms of dysmenorrhea, and in particular of those cases that appear to depend on so-called ovarian irritation; or again of that more common class of cases depending on flexion or some other kinds of mechanical obstruction in the cervical canal?

We can, I imagine, scarcely avoid a blush when we reflect how very little our science has contributed towards explaining the etiology and prophylaxis of these painful maladies. And when we consider that in many instances there appears to be no other resort for permanent cure than the operation of oöphorectomy, I think we should blush again.

For dysmenorrhea due to obstructed cervix, it is true, various successful operations have been devised; and, thanks to the recent

teachings of Dr. Goodell, rapid dilatation of the cervix has, no doubt, afforded a method of relief adapted to the use of many practitioners who hesitate to use the surgeon's knife. But this easy method of treatment is not always so harmless as it is alleged to be; and moreover, in cases—not uncommon ones—associated with old-standing ante flexion, it will, I am convinced, often fail to afford the desired results. In such cases, where circumstances interfere with a cutting operation, and the various anteversion and stem pessaries are not satisfactory, I have often thought permanent—that is, more or less permanent—catheterization of the cervical canal, by means of an extremely light and unoxidizable cervical canula made of aluminium, passing in far enough to keep open the obstructing flexion, and being kept in place by having a fusiform shape resembling that of the cervical cavity, might afford relief, or at least be worthy of trial. But here again I find I am venturing to make answers when I had only designed to suggest questions.

While there are very many other matters that need further study—and some of those even that refer to the anatomy and physiology of the reproductive organs are not yet definitely cleared up—I have perhaps, in presenting the few that are here set down, indicated in what directions we may profitably employ ourselves during the coming year. There is at least, I think, sufficient field for purely obstetric and gynecological work that we shall have no necessity for entrenching upon the domain of pediatrics so far as to introduce subjects that are scarcely appropriate for discussion in this Society. I am induced to make this last remark, not in any spirit of unkind criticism, on my own account, of those by whom such subjects have, at times, been introduced, but rather as the reflex of opinions expressed by a considerable proportion of the members of the Society with regard to them.

Finally, in relinquishing the office with which the Society has honored me during the past year, I beg to tender to its members my best thanks for the kindness and courtesy which have so much contributed to render what little I have had to do, in presiding over its deliberations, both easy and agreeable. I will only, in conclusion, express the wish that new members may be added to our number during the coming year, and that the Society may continue to be as prosperous and successful as it has been in the past.

DR. J. FORD THOMPSON reported

A CASE OF OÖPHORECTOMY

as follows:

The case was seen by several members of this Society, and was one of considerable trouble and annoyance to me, and of much more serious consequence to the patient.

The subject of oöphorectomy has been much discussed of late,

and probably occupies as much of professional thought as any other in the range of surgery, general or special. We have had several cases reported here and in the District Medical Society, and yet the interest does not lag, and the discussions always bring forth widely differing opinions concerning the cases which are thought to demand the operation.

Some unanimity has been reached as to the propriety of the procedure in the large class of cases in which actual morbid changes in the uterine appendages are recognizable, and in those in which the operation is undertaken to retard or cure other pathological conditions dangerous to life, and not themselves amenable to direct surgical treatment. The cases of doubt and hesitation are those in which the symptoms are subjective, or mainly so. Upon this point, quite naturally, there will always be differences of opinion, even among the most experienced, for it is not a subject that can be determined with exactness in the very nature of things, and men's minds are very likely to vary upon so knotty a problem. That brilliant surgical feats will not establish surgical truths or practice has been fully demonstrated of late years. The performances of Billroth and many other great men, while they have dazzled the intellect by the boldness of their conception and skilfulness of execution, are many of them now considered unjustifiable, and remain only to illustrate the possibilities of human endurance and surgical aspirations. While far from condemning, or appearing to condemn any procedure that affords a reasonable hope of affording relief to suffering humanity, I do contend that every new departure in a field of surgery which puts life in danger, should be considered with all the gravity and seriousness of our nature, and with all the help we can obtain from principles and experience. I possess no maudlin sentimentality concerning the interference with the laws of nature as applied to the sexes, believing that it is quite enough to justify interference to know that there is physical suffering, and that we are capable of relieving it. That it is proper in many cases to perform oöphorectomy I have no doubt; that it is practised in many cases without relief I believe; and that it should be classed with the dangerous operations I know. Now, because it is a dangerous operation is no bar to its performance, provided we have the conditions present which are admitted to justify other capital operations. We are only to be sure we are right, and the result will justify the means. In a number of cases I have been in doubt, and have generally given the patient the benefit of the doubt by letting her alone. In others, which I thought proper subjects for operation, I have been deterred by the opinion of others. Now the case to be reported presents many of the difficulties surrounding the operator in this field of surgery. It may be that, if I had any ambition to shine in this particular line, I should not favor consultations to any great extent. If Tait had made it a practice to

hold consultations over his cases, his fame as an operator would be much less extended than it is, and his successes would bear some reasonable proportion to those of others, although none will doubt his uncommon skill as an operator.

My patient's history is as follows:

Mrs. H., æt. 27; married; admitted to Garfield Hospital March 29th, 1886. Was delivered of a child at full term seven years ago; prior to this time, health was good. After delivery, she suffered for three years, and was then operated on for fissure of the anus, which relieved her suffering for a year. She was then under the care of homeopaths, and was operated on twice for some anal or rectal trouble, but without relief. On admission, she referred most of her trouble to the rectum, with pains over the sacrum and general tenderness in supra-pubic region. She was usually constipated, but from time to time had attacks of diarrhea with straining, occurring every three or four weeks. She complained a great deal of her inability to have a natural stool, and there appeared to be a lack of expulsive power, so that she was in the habit of resorting to various manipulations to assist in expelling the feces. Her menses were regular, and her appetite fairly good, but she was anemic, thin, nervous, restless, and hysterical; her general health continuously with a downward tendency.

March 31st. Patient refused examination without ether, saying that she had been examined so often, and had suffered so much, she could not endure it any longer. She was etherized, and I proceeded to examine her, beginning with the rectum which was found healthy. Per vaginam a bilateral, but not extensive, laceration of the cervix was discovered. By bimanual examination a cyst, the size of a hen's egg, was found to the left of the uterus, which it was determined to evacuate through a small canula. While Dr. Sprigg was making pressure from above, the attempt was made to insert the instrument, when the retching of the patient caused the cyst to disappear suddenly. Diligent search failed to find it, confirming the opinion that it had ruptured. Next day there was slight rise of temperature.

April 3d. Examination failed to detect the left ovary or tumor, but the right ovary was enlarged and painful. No ether was used on this occasion.

April 18th. Dr. W. W. Johnston saw the patient in consultation. It was deemed advisable to operate on the cervix, in the hope of affording relief to the symptoms. The operation was performed April 23d, and the sutures removed ten days later.

May 22d. No benefit from the operation. Irresistible desire to defecate, with inability to expel feces. Extremely nervous and hysterical over her condition, and anxious for operation for removal of the ovaries, the nature of which had been previously explained to her.

Dr. Johnston, in a previous consultation, had recommended a

strict diet to be tried, but the patient refused to adopt it. She also declined to permit the use of the cautery. Dr. Johnston thought oöphorectomy might eventually be required, but not at present.

May 23d. Dr. Lincoln examined the patient. He thought her symptoms might be due to the anteflexed condition of the uterus, and advised treatment for that condition.

May 30th. Patient left the hospital unimproved, and during the next six weeks she was under the care of another physician, but was pressing for the operation, which I did not feel like taking the responsibility of performing without further advice. Dr. Taber Johnson saw her with me, and thought it a proper case for operation.

Later Dr. Busey met me in consultation, but was undecided as to the operation, advising a general course of treatment. About two weeks after this consultation, the husband and mother of the patient came to me and begged me to visit her, as she was much worse. They were both anxious for the performance of the operation, urging that it was impossible for her to live long unless relief was afforded. I found her condition much worse than at any previous time. Frequent attacks of nausea and vomiting had reduced her very much, and there was more pain in the pelvic regions. Dr. Busey, in his examination, had detected the diseased condition of the left ovary or ovarian region more than any other had since the rupture of the cyst.

July 10th. Readmitted to hospital. Condition somewhat better. Menses began and continued until the 15th.

July 18th. Operation performed. Present and assisting, Drs. Lincoln, Cutts, G. W. Johnston, Cissel, McArdle, and others. A short incision was made and the right ovary found without difficulty (although there was marked tension of the abdominal walls) and removed, although the morbid changes were not well marked, yet sufficiently so, I thought, to justify its removal. Upon the left side the ovary was found with difficulty, as it appeared to be imbedded in thickened tissue and firmly bound down to the posterior wall. After a number of efforts it was brought into view, but at a considerable distance from the incision. A knuckle of intestine was closely adherent to it. The organ itself was much enlarged with several small cysts, several of which ruptured during the traction, one of them with thick contents black as ink. The broad ligament attachments were much thickened, and the tube somewhat enlarged. I found great difficulty in transfixing the pedicle on account of its depth, but finally succeeded, although the thickened and softened tissues tore into a button-hole-like slit under the needle. Each half of the pedicle was tied separately, and then the whole surrounded by one-half of the ligature. The ovary was then cut away, and the cautery applied. Some of the diseased organ was left in the stump, as it seemed impossible to apply the ligature so as to include the whole. Slight oozing was

found on examination, and with some difficulty a second ligature was applied which appeared to arrest it entirely. The wound was then closed, and the usual antiseptic dressing of iodoform gauze next the skin, with sublimate over it applied. A red rubber drainage-tube extended from Douglas' *cul-de-sac* through the lower angle of the wound.

The patient rallied satisfactorily from the operation, but during the evening and night complained of pain, and suffered from nausea and vomiting.

The next morning her appearance was bad. Only a slight oozing of bloody serum, sufficient to color the inner layer of the dressing, had taken place. There was no distention or marked tenderness of the abdomen. The tube was washed out with warm carbolized water which flowed off perfectly clear. The dressing was applied as before. The wound was dressed every day, and every effort made to check the vomiting, without avail. She became tympanitic, with symptoms of peritonitis and septicemia. She grew continuously worse from the first day, and died on the morning of the 20th, the operation having been performed on the 18th.

At the autopsy, quite enough was found to explain the cause of death. The lower part of the incision was almost gangrenous in appearance, and very offensive. The right ovarian region looked well, but the left presented the same appearance as part of the wound, *i. e.*, gangrenous and offensive. It appeared as if all the tissues had been infiltrated with inflammatory products which had broken down into gangrene without a struggle.

I think the operation in this case was proper, and that it should have been performed sooner. Yet there were differences of opinion on this point, as already said. Such differences are inevitable concerning an operation which has been so short a time on trial, especially when we remember that many leading men discountenance it altogether. Great difficulties were encountered in its performance, but whether Tait would have made a simple and harmless operation of it through his two-inch incision I will not say. The fact that he has been so successful would lead me to believe that he has been extremely fortunate in his run of cases. Operations in cases like mine are inevitably attended with great difficulty and danger. There is no sleight-of-hand in surgery by which an operator can avoid the dangers incident to certain operations, although skill and experience may reduce them to a minimum. This is the third case of death from the operation I am personally cognizant of during the year.

DR. J. T. JOHNSON said he thought it difficult to begin a debate on a case which opened up so extensive a subject for discussion as that reported by Dr. Thompson. Dr. Thompson had said that during an examination a cyst had ruptured. In such cases delay in operation is dangerous. At each rupture of a cyst, attacks of pel-

vic inflammation are likely to be set up, and the uterus gradually becomes fixed or drawn out of place, and we thus get a mass of ovaries, broad ligaments, intestines, etc., matted together by an exudation. Under such conditions an operation is difficult and the prognosis grave. In this particular case, he thought an operation several years previously, or at any rate before the rupture of the cyst, would have given the woman a better chance. Undoubtedly the soft and friable condition the parts had assumed was not favorable for an operation. It was probably the cause of the rapid gangrene on the left side.

Dr. Thompson had stated, among other objections to the operation, that "he knew the operation to be dangerous." The condition of the woman was also dangerous, and warranted an operation as the only hope of saving her. In general, it cannot be proven that this operation is any more fatal than many well-recognized and admissible operations, as, for instance, amputations of the extremities, tracheotomy, etc. The mortality of oöphorectomy is not now very high, and is being constantly reduced, because the operation is being done largely by men who make a specialty of abdominal surgery. The assertion that, if Tait held consultations over his cases oftener he would not have had such great success, might possibly be true, but Tait does go through the form of a consultation in all cases and preserves a record of it, but it is quite probable that his opinion is always adopted, thus making the consultation a farce.

There have been several instances reported where the silk ligature has been burned through or scorched by the thermo-cautery so that it gave way and permitted hemorrhage to take place.

Dr. BUSEY was not surprised at the death of Dr. Thompson's patient. He saw the patient, and only once, in June last, and made a very careful examination. He found the uterus acutely anteflexed and very tender. The left ovary was enlarged, adherent, and very tender. The right ovary was enlarged but not tender. There was great tenderness throughout the left lateral cul-de-sac and behind the uterus. He expressed the opinion that no operation should be performed while the patient was in such a condition, but that she should be subjected to a systematic preparatory treatment for a sufficient time to relieve the inflammatory condition he believed to be present. He could not agree, therefore, with Dr. Johnson, that the operation had been done too late, but rather too early. Moreover, the conditions present might not have existed for several years, but may have been the sequence of the operations on the cervix and rectum.

He would call attention to the indiscriminate use of the word "oöphorectomy" to mean both Battey's and Tait's operations, which are entirely different and for different purposes. As he understood it, Tait's operation was the removal of the uterine appendages, *i. e.*, the ovaries and tubes, and was performed in a definite manner for a well-defined purpose, and, in much the larger number of cases, resulted in a positive cure. Battey's operation, on the other hand, is simply the removal of the ovaries with the prospective hope of mitigating, or, perhaps, curing some one or more of a series of nervous phenomena obscurely referable to the ovaries, which may or may not be known to be diseased before the operation. Tait's operation is usually followed by a positive, well-defined, and speedy cure. Battey's operations, whilst a complete

success in some, is not unfrequently a failure or only a partial success.

Dr. Thompson's opinion that the soft mass found in the left iliac region was in that condition before the operation, and formed a suitable nidus for rapid degeneration, Dr. Busey believed to be correct.

THE PRESIDENT suggested that the time of the year might have had something to do with the fatal result.

DR. THOMPSON did not think so. July and August were as good months as any for operations, in his opinion.

DR. HAGNER thought that Battey's operation should never be done without full knowledge of the cause of the symptoms present. False modesty often prevented us from a complete history. Improper sexual life was the cause of many bad symptoms. Nearly every day the general practitioner meets with questions which show, on the part of the questioner, entire ignorance of the proper relation of man and wife. Only the other day he heard of a man of 56 who, for the last twenty years, had had intercourse with his wife once or more every day. The incomplete sexual act was dangerous to the woman. He did not mean onanism, but the withdrawal of the male organ before the orgasm in the woman. This left the uterus in a congested state, and was the cause of hyperplasia and disease. The same is true of unmarried women who satisfy their desires in improper ways. It is every doctor's business to teach the proper use of the sexual apparatus, and until there was a proper understanding on the subject, there would be trouble.

DR. J. T. JOHNSON remarked that Dr. Goodell had a theory that ungratified as well as over-gratified sexual desire brought on trouble, as in uterine diseases in old maids.

DR. THOMPSON thought Dr. Busey's remarks on the distinction between Battey's and Tait's operations pertinent. He did not think the inflammation found at the autopsy, although present before the operation, due to rupture of the cyst. When that accident occurred he had put the woman to bed and ordered low diet. There was no rise in temperature, and in a few days she was up. Nor did he think the acute inflammation which Dr. Busey previously found was present at the time of the operation.

He thought Dr. Johnson's comparison of this with other surgical operations not allowable, as operations of expediency and necessity were totally different.

DR. J. T. JOHNSON said he only made the comparison to lend weight to his remarks, and to show that some well-recognized operations were equally dangerous with oöphorectomy.

DR. THOMPSON, continuing, said the indications for an operation had to be pretty definite before he undertook it. He had recently examined, under anesthesia, a young woman who had for years suffered torture at her menstrual epochs. Her menses had been absent for several months. He found the uterus three or four inches deep, but could find nothing the matter with the ovaries. He refused to operate because he could not say that the removal of the ovaries would benefit the uterus, the only morbid organ he could find. Hysteria alone never justified the risk attendant upon the operation.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Stated Meeting, December 9th, 1886.

The President, J. L. CLEVELAND, in the Chair.

DR. JULIA W. CARPENTER reported

A CASE OF MISCARRIAGE WITH TWO DISTINCT OVA OF DIFFERENT AGES.

The following case is one of some interest, as its explanation involves points not yet fully settled:

Mrs. B., a young woman 24 years of age, was under my care for her second gestation. This she was very anxious to be conducted safely through, as the first, two years before, had terminated at about the third month under very unfavorable conditions.

Not very strong at best, at the time of her marriage she was on the verge of nervous exhaustion, the result of one of the greatest drains on all the reserve forces of the body, viz., two years of uninterrupted gay society life. The nausea of pregnancy then reduced her to a state of great emaciation and weakness, and the miscarriage occurred at the third month. Severe hemorrhage at this time still further reduced her strength, and her recovery was very slow.

During this period she was not under my care, though she had been at various times before. When, a few months later, she was again my patient, the nervous exhaustion was complete. The only internal troubles that existed were a slight retroversion, with some erosion of the os. These yielded to appropriate treatment, and, with a partial rest cure, the most that could be done in her own house, she gained slowly in strength.

Knowing that the complete rest cure was, for her, the only short road to health, and as her husband said it was impossible for her to have quiet and freedom from society in her own home, and he was not willing to have her any place else in her own city, I advised taking her to Weir Mitchell for several months. This was done, and I wrote Dr. Mitchell a brief report of the case. Dr. Goodell also saw the case in consultation with Dr. Mitchell. He made an internal examination, and found nothing requiring treatment. She returned greatly improved, but still obliged to lead a careful, routine life.

Some months later, the second gestation had begun. The nausea, which commenced as in the first instance, was relieved by ingluvin in ten-grain doses after meals. She ate regularly, and

was in fair health until the tenth week was reached, when, one evening, I was sent for in haste, as a drop of blood had passed. When I arrived, the patient was already in bed, as I had instructed her what to do in such an emergency. There had been a little more flow and slight uterine pains. An opium suppository was used to allay the contractions, and as they were both extremely anxious, I remained in the house all night.

The patient slept well during the night, and had but little sensation in the pelvis. In the morning, however, the flow increased, the os was dilating, and I told them that, for several reasons, I deemed a miscarriage inevitable.

Her husband then said, if that was so, he would like a consultation, as that was their second loss, and he would like to know all that could be known of her case.

Dr. Thad. Reamy was telephoned, and just before he arrived a small ovum was expelled without pain. Dr. Reamy made a careful examination of both ovum and patient. The ovum proved to be about the age of three weeks, not more. It was about an inch in length, and, as it was floated in water, the fringe-like villi of the chorion showed beautifully. There was a rent on one side, and the embryo was not detected, though at three weeks it is not distinct.

There was now to be accounted for a three weeks' ovum and a two and a half months' gestation. The possibility of a second ovum still in utero was explained to them, adding that only time could decide the question. This ovum was expelled about 9 A.M. the first of last March. When I called again, late in the afternoon, there had just passed what appeared to be a fleshy mole of the usual ovoid shape and about four inches in the long diameter. Wishing the consultant to see this undisturbed, I took it to his office where it was dissected, and pronounced to be a product of conception, a carneous mole.

The patient made an excellent recovery, and has since been in good health, but not strong.

I was told the physician in attendance the first time suspected two ova, but whether of different ages they did not know.

An incident in the family history might be mentioned, though it was not given accurately enough to make it of any special value. Her great grandmother had a miscarriage about the fourth month. To her surprise, the signs of gestation continued, and at the end of the ninth month a child of full age was born, and is now living.

One question of importance to the patient is, Was the disease of the ovum, whether placental apoplexy or not, the result of the patient's lack of strength?

The other points, superfetation and double uterus, are also of great interest.

DR. THAD. A. REAMY said that he would not enter at any length into a discussion of the subject of superfetation, since he had but

recently taken part in a lively debate on this question before the Academy: he would therefore simply, in a few words, refer to the case related by the essayist. He doubted whether this case threw much light on the question of superfetation. There was no doubt, however, that, taking amnion and chorion together, the evidences were there; but there was no ovum. The product of conception did not seem to be more than three weeks old, still it was not impossible that it was more than a three weeks' fetation, the ovum having become blighted and not reaching the proper period of gestation. So much was certain, however, that the membranes had not passed beyond the degree of development answering to that of three weeks.

If we assume this specimen correct as to date of conception, then the other specimen must have been produced at a date prior to this. Now, this other specimen was a carneous mole, existing in the uterus as a foreign body, and, as it is the habit of the organ to expel its contents, this explained the abortion.

Another question may arise: Did conception occur with a carneous mole in the uterus? To all appearances it did: hence, in so far, this might be called a case of superfetation. It is a question, however, if the uterus at such size, with a mole within it, would permit the development of a new ovum, as a normal pregnancy would not under similar circumstances.

Dr. Reamy agreed with the previous speakers that there was at times a decidual cavity after conception. This cavity may exist in rare instances for as long a period as three months, as demonstrated by Coste. This fact is admitted even by the opponents of superfetation. The placental site is usually in the upper part of the uterus and to one side, and more likely on that side of the womb corresponding to the tube and ovary from which the ovum came. Everybody consents to this. There being a space between the decidua vera and decidua reflexa, it is beyond dispute that an ovum in the opposite Fallopian tube may become fertilized and find its way into the cavity above mentioned. This anatomical fact being recognized, one of two conditions must prevent superfetation.

First, it is claimed that all ovulation is suspended during pregnancy.

Secondly, the decidual cavity is not in a condition to give nutrition to a second fecundated ovum.

In answer to the first proposition, the speaker would state that, if it be claimed, as a physiological fact, that pregnancy always arrests ovulation, he would inquire why pregnancy should not arrest ovulation in a double uterus as well as in a single uterus. Even the opponents of superfetation admit that a uterus that has two cavities with but one os may harbor a fetus in each cavity. What is possible to occur in a uterus with two cavities, fecundation taking place in an ovum from each Fallopian tube at different periods, may also occur in a single uterus. This objection then falls to the ground without making reference to the well-known cases of Tyler Smith, Slavjansky, Bonnar, Mayrhofer, and others.

These cases prove, as clearly as clinical testimony can prove anything, that ovulation sometimes continues during pregnancy, and that a second ovum may be fertilized and developed in the uterine space not yet occupied by a pre-existing pregnancy.

Secondly, the condition of the decidual cavity, already men-

tioned, as not wholly obliterated by the growing ovum, is not well understood.

It is known that the decidua vera, in this part of the uterus, does not develop so rapidly as in that part of the organ with which the ovum is in contact. It is more than ordinarily vascular, which may be presumed to be a condition really inviting the lodgment of a new ovum, and rendering its early growth more easy. Of course, when the two ova come in contact, the older would be the more likely to survive, while the younger and feebler would probably suffer.

The speaker also believed that, so far as unsuitableness of the decidua was concerned, the same objection might be urged against the possibility of fetation in a double uterus, since it is probable that, in such a condition, decidual changes are as apt to occur in the untenanted uterine horn as in the unoccupied space in a single uterus. At least such an inference is quite reasonable when there is a single cervix with a double uterine body, and the two cavities separated only by a partition.

He was persuaded, in the light of so much clinical evidence in favor of superfetation, and in the absence of any investigation which proved the unfitness of the decidua in the vacant uterine space to receive and nourish a second ovum, that the second objection, in the main, was untenable. He would confess that there are probably exceptional cases in which the decidual changes do not advance so rapidly.

In answer to a question why the ovum corresponding to a gestation of three weeks, in the essayist's case, was not found, the speaker stated that it was possible that the ovum existed, but had escaped unnoticed by the physician; often it cannot be found.

The speaker had with great care examined the specimen. In every detail it was healthy. Its size, and the villous development of the chorion, would correspond perfectly to three weeks.

The best obstetric writers, Cazeaux and others, hold that, when there is a blighted ovum associated with another pregnancy, it is more frequently due to a diseased condition of the fetus itself, or its own envelope, than to the decidua. It must be remembered that the placenta, when formed, is chiefly fetal. The abortion in this case was evidently caused by the presence of the carneous mole.

As the carneous mole is a product of conception, and as in this case the specimen could not have been less than three months old, the interest attaching to it, in a clinical point, is important. He would consider it probable that its presence was not a bar to conception, yet he would not hold that the case bears very conclusive testimony for or against superfetation.

DR. J. G. HYNDMAN said that he had not paid much attention to the subject of superfetation, but from his reading he was inclined to regard superfetation as an impossibility. He considered the case reported an example of a blighted ovum of the same age as the other product of conception.

DR. PALMER stated that he regretted not having heard the paper, but he had listened to enough of the discussion to make him think that the case reported was probably one of superfetation. Nevertheless, he recognized the force of the objection that the specimen might be one of ordinary multiple pregnancy with two ova, commencing at the same time, the development of one having been blighted by the growth of the other.

He believed that there was such a thing as superfetation. Numerous instances of multiple pregnancy have been reported, which can be explained satisfactorily in no other way; for instance, some of the cases collected by Bonner, of Edinburgh, and the delivery of two children by a negro woman, each child being of different color, admission being made of cohabitation with both a black and white man.

There is no doubt of the existence of a decidual cavity, open until well into the third month of utero-gestation.

Some years since, the speaker was suddenly called to a woman who, when he arrived, was dead, found stretched upon the floor, with a Davidson syringe and a bowl of cold alum water at her side. The circumstantial evidence was that she had killed herself by a vaginal injection. The coroner, then Dr. Underhill, ordered him to make a post-mortem examination, which revealed no cause for death outside of the pelvis. The uterus was pregnant nearly three months, the decidual cavity was open, and its structures indicated certain physical and chemical changes produced by the intrauterine injection of alum water. He testified that, in his opinion, the woman died from the effects of the injection tube penetrating the cervical canal. He doubts not that death resulted from the distention of the uterus and shock to the hypogastric sympathetic.

Let us look at the objections which are offered against the doctrine of superfetation.

They are three in number.

1. That, if possible, it occurs only when there is a double uterus. Undoubtedly, this is true with some cases, and a very satisfactory explanation for them. But well-marked specimens have been produced when neither a physical examination of the pelvic viscera nor a post-mortem examination could detect any such arrangement of the organs. We are compelled, then, to abandon this objection.

2. It is stated that a plug of mucus exists in the cervical canal, offering a physical barrier to additional insemination. As a matter of fact, the formation of this cervical plug is quite often absent or defective; and even if it did exist, it probably would not prevent the penetration of live, active spermatozooids.

3. The third is the chief objection, viz.: that ovulation is suspended during pregnancy. Unquestionably, this is a fact in most cases, but it is not true with all. Freshly ruptured Graafian vesicles have been found post mortem in women who have died suddenly by accident or from disease during pregnancy. The ovaries act independently of the uterus. Ovulation commences before menstruation, continues with less interruption than it, and is often active after the cessation of the uterine function. It is a daily observation almost that ovulation must have been continued during lactation by the occurrence of pregnancy at that time. The presence of periodical pains in the pelvis during pregnancy, the increased tendency to abortion at certain intervals, and the final termination of gestation at the end of the tenth lunar month, are strong presumptive evidences of the non-cessation of function of the ovaries during pregnancy.

With these facts in view, viz.: that a double uterus or two uteri positively do not exist in all cases; that the cervical mucous plug is not to be found, or is physically incompetent to exclude spermatozooids from the uterine cavity prior to the closing of the

decidual cavity; and finally, that positive evidence of ovulation having been found post mortem in a few cases during gestation, and a reasonable assurance of the continuance of the same function in other cases, by the presence of certain symptoms and effects, may we not safely say that the possibility of the occurrence of superfetation is well established?

DR. GILES S. MITCHELL said superfetation implies two things: ovulation during gestation and the passage of the sperm between the uterine and ovarian deciduæ into the tube.

Is it possible for these conditions to be fulfilled? We think it is. Until about the third month of pregnancy, a decidual cavity remains, with free access to one of the tubes; hence, up to this period superfetation is possible.

In the case reported, is it not probable that, as soon as the product of the first conception became a "mola carnosæ," it lost its power of inhibiting the ovarian function, and was virtually a foreign body in the uterine cavity when the second impregnation supervened? This would explain satisfactorily the second fecundation and also the abortion. It seems strange that two such careful observers as the essayist and the eminent consultant should have failed to find the three weeks' embryo.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, November 19th, 1886.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. W. W. JAGGARD read a paper entitled

A CASE OF CHRONIC INVERSION OF THE UTERUS OF TWENTY-ONE MONTHS' STANDING REDUCED BY COLPEURYSIS.¹

DR. PHILIP ADOLPHUS.—The author of this excellent paper has adopted in the reposition of the uterus of his patient as efficient a mode of procedure as any hitherto in use. It is also the safest mode of replacing the organ. In the treatment of chronic inversions, success has followed all methods of replacement, whether effected gradually or rapidly. But forcible taxis ought to be the last resource, when gentler and as efficient means are exhausted. It may lead to laceration of the vagina, peritonitis, and death. Gradual pressure, sustained or interrupted, solid or elastic, to which taxis has been added, has been equally successful, and has been practised since 1858. It is absolutely safe. In some cases, air pessaries or other elastic contrivances have been left in the vagina constantly, or have been replaced at intervals, for a period of three to eighteen days, and *uteri* have been returned by this method which were inverted from one to fifteen years. The essential to success in the return of an inverted uterus is patient,

¹ See page 130.

gently continued manipulation of *some portion of the uterus* by the fingers in the vagina with the application of the other hand externally to overcome the constriction of the cervix, and to prevent the forcible elongation of the vagina. A small hand, which observes the course of the pelvic axis, and avoids the promontory of the sacrum, and goes on one side of it, is also an element of success. Old adhesions opposing reduction of the inverted uterus are rarely present. An inflammation of the serous tissue in some portion of the pelvis may, however, be present as a complication, for this is an extremely common affection in all kinds of pelvic disease. Doubtless, in cases in which peritonitis followed manipulations, a chronic or subacute inflammation of the serous tissues was the predisposing cause. However, the most interesting portion of this subject to me is that of diagnosis *in all tumors lying in the vagina* which do not pathologically implicate that organ and the vulva. A correct diagnosis in inversion of the uterus is absolutely essential to treatment and the safety of the patient. The question of differential diagnosis between inversion of the uterus and polypi and fibroids is almost daily presented to the gynecologist for solution. Not much reliance can be placed on the history in *chronic* inversion, from a diagnostic point of view, for the diseases present similar symptoms. The size of an inverted uterus of some standing is scarcely larger, and is often smaller than in the natural state. It is desirable to look on the case under examination as one of inversion as long as any doubt exists. The bowels and the bladder should be emptied, and the patient examined under ether. It is certainly *not* a case of inversion when, by *bimanual palpation*, with fingers in the vagina, fingers or hand into the rectum, or sound in the bladder, the *unimpaired roundness* of the uterus presents itself for palpation, either in the normal or retroverted position. In the just-mentioned condition, if the sound enters the uterus two and one-half inches or more, the uterus merely contains a fibroid or polypus which emerges from the cervix. The diagnosis may be rendered more difficult if no opening in the *cervix uteri* can be found, the cavity having been agglutinated by previous inflammation to the polypus. Here downward traction of the vaginal tumor to the vulva by a vulsellum is recommended by Sussdorff, and, I copy his words, will at once confirm the presence of a polypus. "For the relations of the parts to each other as they existed in the vagina will be greatly changed when exposed to view. The lips of the cervix which surrounded the pedicle will have disappeared, having also become inverted, and along with it, probably, the vagina at its junction with the neck." The insinuation of the sound into the uterus will at once confirm the information procured by bimanual palpation. If the same manner of examination discloses the body of the uterus indented or cupped, we have a partial inversion, either with or without a fibroid, a condition which is not as unfrequent as is generally supposed. The presence of a tumor in the vagina, the absence of the *fundus uteri* in the abdomen, and the presence in its place of a well-defined ring or cup-shaped cavity unmistakably announces an inversion of the uterus; traction confirms the diagnosis. An incision, not a puncture, along the sides of the tumor, after the patient emerges from the ether, will at once show whether we have to deal with the fundus of the organ or a polypus. In the one case, it

will induce pain, in the other it will prove painless. In the former, it will relieve the congestion, and possibly lead at once to its reposition, or prepare for its successful replacement in the future.

DR. H. P. MERRIMAN.—I would like to ask whether, after the uterus had been partially restored so that the fundus was on a level with the lips, and the colpeurynter seemed to do no good for eight days following, taxis would not probably have promptly, almost immediately, accomplished the remaining portion of the work?

DR. H. T. BYFORD.—Every method has danger, and there was one danger in this method which should be mentioned, that is the danger of sepsis or resorption of decomposing secretions. That there was danger even in this admirably managed case was evidenced by the rise in temperature, followed by the decline in temperature on cleansing the bag and vagina. I have seen the immediate decline of fever by washing out the uterus when enlarged and filled with decomposing matter. I object to the introduction of the hand into the rectum to diagnose a case of inversion, as suggested by Dr. Adolphus. I consider it a dangerous practice because it does a violence to the part which sometimes has resulted in irreparable injury, and is unnecessary.

DR. W. H. BYFORD.—With reference to the subject of inversion, and more particularly the diagnosis, there are two points which I think are very important in addition to those mentioned by Dr. Jaggard. In cases of polypus attached to the neck of the uterus and filling up a good part of the vagina, the uterus is always enlarged and may be palpated above the pubes. Another point in the diagnosis is the difference in the sensation imparted to the examining finger. A polypus feels as if covered by a shining, smooth membrane, unless it is decomposed, while the surface of the uterus gives the sensation of pushing the finger into plush or velvet. I give these two points of diagnosis as the results of my own observation and as being usually present. With reference to the mode of reducing inversion, I will give some of my own experiences during the last thirty years. In the winter of 1859-60, I had a patient sent to me from Lafayette, Ind., with a chronic inversion of the uterus, which I attempted to reduce. I had just read a long treatise on the subject by Dr. White, of Buffalo, and Drs. Thomas and Emmet were then beginning to talk and write about these things, and I went at it with considerable enthusiasm. I got up the cup that Dr. Jaggard mentioned, and I also got a large rectal bougie, an instrument which Dr. White had praised very highly in his first operations, and I made the first attempt lasting about an hour and three-quarters, and when I got through I was worse off than the patient, although she was pretty badly used up. I waited two or three weeks and made another attempt, but after a protracted effort I found my finger passing through the *fundus uteri*. I had been as cautious about the force as I could be, making the effort as gradually as possible, but I perforated the fundus. I fully expected that the damage done would be fatal to the patient, but it did not produce any bad effects whatever and she entirely recovered in two weeks and went home. Two years later, she came to see me again, but did not wish to have another effort made to have the uterus reduced. Two years later, the uterus was found in its normal position. I

saw the patient and her physician, and I am certain that nothing had been done to reduce it. I tried two other cases, and made the same efforts, but without success. I then concluded that it was hardly worth while to make trials of forcible taxis again, and in the next case I tried the colpeurynter treatment. For some days I was nonplussed, from want of experience, as to the mode of placing the instrument in the vagina. I used a quadilateral colpeurynter, and after I placed it in the vagina, I found the next day that I had gotten the instrument under the uterus lengthwise, that the fundus was directed toward the vulva and the neck directed backwards, I was merely compressing the body of the uterus against the *symphysis pubis*. I reflected considerably before I could get the right idea as to the manner of placing the instrument in the vagina. Finally, I pushed back the fundus until the axis of the uterus corresponded to the axis of the superior strait and then introduced the colpeurynter as has been described by Dr. Jaggard, and applied the force. The next day when I came back I found there had been some impression produced and I went on with the use of it, taking it out every day and replacing it in this manner until in seven and a half days the inversion was reduced. The patient was a poor woman, and it was necessary for her to take care of her child. She did so, attended to it in every way, and also cooked three meals a day for her husband. She was on her feet nearly the whole day time and yet the instrument acted as well as if she had been lying in bed. Three out of the five cases I have operated on have been as painless as this. I should judge that a young primipara would probably suffer more from the use of the colpeurynter than one who had had children. I have now reduced five cases of inversion by the colpeurynter and have not failed in any case since I commenced using the instrument. The first case of inversion I had I amputated the uterus. And in considering the matter since, I doubt if any other treatment could have been adopted which would have been effectual. The uterus and vagina were both inverted, the whole vaginal canal was entirely outside of the body, and the uterus hung down from it, both making a tumor nine inches long. The uterus was very much enlarged in consequence of its being dependent for so long a time. I was in consultation with two German physicians of this city, and they suggested, as the patient was living a miserable life and would die before long, we should cut it off. After half an hour's use of the *écraseur*, it was removed. We amputated a little below the centre of the cervix. There was no bleeding, nothing to give rise to uneasiness. We pushed the vagina back again, put the parts in place and the patient recovered in the course of a month. Having spoken of one spontaneous cure, I will tell you of a patient that I attended in Mercy Hospital in 1864-65, whose uterus was much in the same way as the one I first operated on, coming out entirely beyond the vulva and dragging down the vagina very low so that there was simply a circular sulcus between the labia and the vaginal wall. I tried to restore it by manipulation and failed; I proposed to amputate it, but the patient would not consent. Meantime one of the Internes had fallen in love with her, and they went off to Missouri and got married. About six years afterwards, the doctor came back and told me that he had a son and his name was Byford. Upon inquiry, I found that the child was borne by this

woman. One case of inversion occurred in my own practice. I attended the patient during confinement, and so far as I know she had no difficulty whatever for seven or eight days. By that time I was on my road to California, and I think Dr. Roler looked after her for some little time after I was gone. In two months I returned home and was informed that she had inversion of the uterus, which I did not believe. I went to see her and found that she was suffering from complete inversion. That was one of the cases I cured by colpeurysis. When the inversion occurred I do not know. I am certain that I made two or three examinations as I always did at that time, always one the second day after confinement. I did not notice anything of the kind, and yet it might have been commenced, and finished afterwards. I saw a case with Dr. Henry T. Byford, which had been attended by a midwife, in which the inversion occurred so that the fundus could be touched through the mouth of the uterus, and it remained in that way two or three weeks. The patient was bleeding, but I believed the contraction of the mouth of the uterus was sufficient to prevent its coming through, I advised ergot, and in a few days the uterus was in its proper position.

DR. EDWARD WARREN SAWYER.—One point is the persistence that one can observe in applying colpeurysis, without a fatal result following. The interesting case that Dr. Byford has spoken of last also shows the possibility of the obstetrician seeing nothing in the first few days of the puerperal state to suggest that anything has gone wrong. Cases are recorded in which the inversion has taken place without the obstetrician knowing it. In the fatal case that occurred in my practice, the symptoms were so marked that it was impossible to overlook it, and I think the diagnosis of recent puerperal inversion of the uterus is much easier than of chronic inversion. In the case which occurred in my practice, the rim of the crater marking the upper border of the uterus, which I palpated through the abdominal walls, was fully as large as a common bowl, and its edges were very sharply defined. In addition to that, the fundus could be distinctly felt through the os uteri.

DR. H. P. NEWMAN.—My experience has been limited, but I remember a single case, in which I assisted a surgeon of this city, in attempting the reduction of a chronic inversion of the uterus. It was in a hospital, where they had every facility for the operation and it could be proceeded with leisurely. Some two hours were taken up with the various devices for reducing the inverted fundus, all of which were of no avail. There was complete inversion of the uterus, but not of the vagina, and I think previous to the attempt at reduction a fibroid was removed from the fundus of the uterus. No further myomatous condition was discovered at the time, but the difficulty was exceedingly great in this case and nothing whatever was accomplished. I have no knowledge of the subsequent condition of the patient, whether she suffered materially from this, or whether she was afterwards successfully operated upon.

THE PRESIDENT asked Dr. Jaggard what means he used to disinfect the colpeurynter.

DR. JAGGARD replied that he washed it thoroughly with soap and warm water, afterwards disinfecting it with a 5% solution of carbolic acid. The vagina was irrigated with a 2% solution of carbolic acid, and a *bacillus* of iodoform introduced.

DR. ADOLPHUS, in reply to Dr. Henry T. Byford.—In complicated cases of tumor in the abdomen or pelvis, I would not do without the introduction of the hand into the rectum. I am not alluding to Simon's method, putting the hand in as far as the elbow, but I am talking of the hand. And when the patient is under ether, it can be done very easily. It depends upon the size of the hand, perhaps, but with the hand well greased and introduced slowly it does a great deal of good and gives an immense deal of information which you cannot get in any other way. I examine every case, without exception, *per rectum*, with the finger.

THE PRESIDENT asked Dr. W. H. Byford if he regarded it good practice, after all ordinary means had been exhausted and the uterus was still inverted, to amputate?

DR. W. H. BYFORD.—When all other measures have failed to effect the object and the patient is suffering so much as to make relief imperative, yes.

THE PRESIDENT.—I saw Prof. Chiara, in Florence, operate upon a case of that sort. He placed a silver wire around the uterus and left it in position, and the parts gradually sloughed away.

DR. W. H. BYFORD thought that mode of operating upon the uterus bad, that it would have been better to have used the wire *écraseur* to stop circulation, and then cut off the organ. A sloughing mass in contact with the parts would be likely to produce pyemia.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, December 1st, 1886.

J. B. POTTER, M.D., *President, in the Chair.*

The following specimens were shown:

MR. ALBAN DORAN.—A dissection of the muscles of the female pelvis.

DR. PHILLIPS.—Conjoined twins. Dicephalous monster delivered with one pain without assistance.

“ON MERCURIALISM IN LYING-IN WOMEN UNDERGOING SUBLIMATE IRRIGATION.

BY W. R. DAKIN, M.D., B.S.—The author gave a list of recorded deaths from mercurialism in lying-in patients, with an epitome in each case of the post-mortem appearances. He mentioned Keller's recognition of mercury in the urine of patients douched with sublimate solution, confirmed by his own experiments. Having noticed the contra-indications to its use, he detailed the method employed at the General Lying-in Hospital, and

examined the conditions affecting susceptibility to the poison, including Von Herff's experiments. The symptoms of poisoning were given in detail in the cases observed. He narrated two cases, one of the milder form of poisoning and one fatal, in which the post-mortem appearances and histology of the kidneys were given, and made a comparison of results obtained as regards temperature, rate of involution, and duration of lochia under different modes of using the solution. The precautions to be observed and the most successful method of use were then indicated, and the opinions of continental physicians quoted, and the treatment which proved most useful pointed out.

He gave a table of affected cases under his observation, showing the symptoms and their respective dates of appearance, with a list of authors referred to in the course of the paper.

DR. BOXALL thought that the first fatal case related by Dr. Dakin was due to shock from the sudden passage of foreign material into the blood stream through the uterine sinuses. He had seen such a fatality after an intrauterine injection of carbolic acid. As one of Dr. Dakin's more immediate predecessors at the General Lying-in Hospital, he had an excellent opportunity of observing the results obtained by carbolic acid and permanganate of potash, compared with corrosive sublimate as an antiseptic agent.

DR. BOXALL showed a table representing the morbidity among all the patients admitted to the hospital during sixteen months. Nothing but sublimate irrigation, 1 in 2,000, was used during the latter half of the time, and the morbidity was reduced in a marked degree. Among two hundred and forty patients delivered during the sublimate era, three cases of slight mercurialism occurred, while pyemia, septicemia, and local pelvic mischief were almost entirely eliminated.

DR. DAKIN had reported ten cases of mercurialism after one hundred and sixty-five deliveries, but the symptoms were very slight, and a solution of 1 in 1,000 is at present employed immediately after labor. Dr. Boxall thought that sublimate solution deteriorated, owing to the alkalinity of London water, and he advised a concentrated preparation from which to make the solution for immediate use with the addition of acid hydrochlor. dil. in the proportion of 3 iv. to each $\frac{3}{4}$ i. of solid sublimate.

DR. JOHN PHILLIPS thought that the question of intrauterine injections was sub judice. As regards vaginal injections, if there were no lacerations, the use of the sublimate might be safe, not otherwise. He used a 1 in 2,000 solution to dip the hands in before examinations, and was accustomed to add enough litmus to color it pale purple.

DR. MATTHEWS DUNCAN recognized the supreme importance of the subject now brought before the Society in a valuable contribution. He remembered the wonderful diminution of morbidity in the Edinburgh Maternity Hospital, when antiseptic treatment by carbolic acid was introduced there. Now he had no maternity hospital, unfortunately, but only the experience acquired in home and consulting practice. Nothing in the history of midwifery could show such beneficent results in practice as antiseptics, and the importance of details was shown by Dr. Boxall's table of the

results in the York Road Hospital. A gradual and very large diminution of morbidity as the antiseptic was changed from Condyl's fluid to carbolic acid, and from that to corrosive sublimate, from first to last a diminution of more than thirty per cent. The paper showed the dangers of mercurial antiseptics, and he should not be satisfied with care after the mercurial poisoning began. Such care might be too late. In consequence, he confined the use of the sublimate to one or an occasional application, using carbolic acid for the continuous antiseptic washings. He had not seen hydrargyrisms when the antiseptic was used in this way. Great care must be taken to leave no pool of the solution in the patient. This is especially necessary when, what has been called ballooning of the vagina occurred, a state due rather to a want of intra-abdominal pressure than any condition of the perineum.

DR. PARAMORE advocated the use of alcohol as an antiseptic injection during and after labor.

DR. GRAILY HEWITT thought that the practice of midwifery in private and in a lying-in hospital could not be looked upon as identical, so far as the frequent use of antiseptic injections was concerned. He was anxious to insist on this, because, if it went about that the internal injection of a dangerous antiseptic, such as corrosive sublimate, was, in the opinion of this Society, essential to the safety of the lying-in patient, it would be the cause of infinite mischief. No doubt, in a lying-in hospital, extreme precaution was justifiable, but in private practice less dangerous materials could be employed, and frequent use of injections could not be held to be necessary.

DR. ROGERS had seen sudden death follow an intrauterine injection of iodine, in a case of fibroid of the uterus with metrorrhagia. He now always uses dilute iodine irrigations, and has never seen or known any bad results.

DR. CHAMPNEYS feared the present discussion might hamper those who rightly might wish to use sublimate irrigations in suitable cases.

Private practice and hospital practice differed in one respect; in both, the patient required protection from infection by the accoucheur and nurse, but the latter also required protection from other patients. We had to balance the risk of sepsis against the risk of mercurialism, and he unhesitatingly embraced the latter.

During the five years which Dr. John Williams and he had charge of the General Lying-in Hospital, their total mortality was but 7 per 1,000, and in the face of such results he cheerfully accepted the responsibility of the risk of mercurialism by routine post-partum irrigation with sublimate.

In private practice he reserved this for cases specially liable to infection—cases of operation—in which he did not hesitate to wash out the uterus (if entered by the hand) or vagina with corrosive sublimate, 1 in 1,000 or 2,000. He did not usually repeat the sublimate, preferring to leave one of Ehrendorfer's iodoform bougies in the uterus. In simple cases in private, he used Condyl.

REVIEWS.

PRAKTISCHE GRUNDZUEGE DER GYNÆKOLOGIE.—PRACTICAL ELEMENTS OF GYNECOLOGY. By DR. A. RHEINSTAEDTER. Berlin: August Hirschwald, 1886, pp. 388.

The title of this work describes it exactly. The author is eminently practical and wide-awake himself: he aims to present to the reader, shorn of superfluous detail, the practical, daily side of his work, in other words, chiefly the diagnosis and treatment of the diseases. Dr. Rheinstaedter has done for his German brethren, although less elaborately in many respects, what, in a measure, Mundé has done for his American. He succeeds even as did the latter, and this, too, with exactness in regard to method and detail, far more in accord with modern gynecology than it is customary to find in transatlantic works.

It is Dr. Rheinstaedter's belief, and a very just one, that many of the affections peculiar to women should, as regards diagnosis and treatment, lie within the scope, not alone of the specialist, but also of the general practitioner, and these affections it is on which he lays most stress. "It is more difficult," he tells us, "to become an expert general physician than an expert specialist," for the former should have a broad knowledge, sufficient for routine application, of all the specialties, whilst the latter necessarily works in a more contracted sphere. With this belief ever before him, our author proceeds to show the general practitioner what he may do, and how, at the same time pointing out what affections should rather require the counsel and aid of the specialist. Wherever necessary he enters into minute detail, and gives little hints as to manipulation which many a more pretentious volume suffers from the lack of. In accordance with what we have stated, this book is divided sharply into those affections which the general practitioner ought to be able to handle, and into those which strictly call for the specialist. The former division includes: the acute and chronic diseases of the vulva, vagina, and uterus, inflammatory and not; the displacements of the uterus and of the ovaries; para- and perimetritis; lesions of the perineum; hematocele; congenital vices in development. The latter division embraces: fistulæ; newgrowths of the uterus and ovaries; the hemorrhages of the climacteric. A special section, considering sterility and the neuroses, concludes the volume.

We do not propose to enter into a detailed analysis of the contents of this volume, but aim simply at calling attention to certain of its virtues, and, in our opinion, to certain of its faults.

The best gynecologist, in Rheinstaedter's opinion, is not "he who writes or operates the most, but he who best helps and cures, without endangering the life of his patient." This is the key-note of the treatment our author advocates. Bold in emergency and in the presence of strict indication, conservative and cautious where there is just ground for doubt. How many of our gynecologists, should they sound their consciences, will find therein this strict and laudable rule of action?

Rheinstaedter justly lays stress on the prime importance of

careful bimanual palpation. "If I had to choose," he says, "between the finger, speculum, sound, and the bimanual palpation, for which we are indebted to Sims, it is the latter which would ever gain the preference." Fewer mistakes in diagnosis, indeed, would be made were the practitioner sufficiently impressed with the value of this method, and did he understand the proper way of performance. When the author speaks decidedly in favor of specular examination in the dorsal position over that of the left lateral, we at once take issue with him, and we cannot quite understand his preference, for he proves himself no tyro in the use of the Sims speculum. Every gynecologist of much experience will agree with us in the statement that, frequently, both diagnosis and treatment can only be completed by means of the left lateral specular examination. We will instance simply the difficulty of saying much about the real extent of a laceration of the cervix through a cylindrical or bi-valve speculum, and of making, for instance, an application to the fundus of a sharply retroflexed uterus, through either of the above forms of specula.

The author, of course, has but little to say in regard to laceration of the cervix, and we have ceased to be at all surprised at an omission of this nature in any transatlantic volume. It is obvious that his ignorance, or rather general lack of recognition of this lesion, is due to his expressed preference for specular examination in the dorsal position, for the little reference he makes to Emmet's operation is to be found under erosions, where he says "the pathological importance of ectropion has been much overestimated by Emmet and American writers; there exist lacerations without ectropion, and ectropion without erosions. Only when laceration with erosion exists, are the consequences as great as Emmet would have us believe." This is all very true, and on just such an opinion are the operations of conservative American gynecologists founded. Further, he says, and again with truth as applied to the practice of not so many years ago, "the importance of laceration has been much overrated by Americans and Englishmen (of the latter who, since Playfair is about the only Englishman who grants its utility?) and has been considered a panacea for all possible gynecological and nervous affections." When, however, the author states that extensive lacerations may be healed by other treatment, we disagree with him, and we add the positive statement that lacerations of this nature, if not repaired, are very frequently the starting point of epithelioma, which reason has become for us the chief indication for trachelorrhaphy.

Our author, evidently, has as yet reached only a very primitive stage of development in regard to this operation and lesion, else, admitting its value in very exceptional cases, why does he not describe it and thus wrest his countrymen from the darkness in which they are still, with but few exceptions, groping?

The subject of miscarriage is briefly treated of by the author, in order to forcibly impress on his readers the advisability of prompt action in treatment, and to describe the methods of value for effecting cervical dilatation. In regard to the early diagnosis of pregnancy, which is briefly touched upon in this chapter, we take direct issue with him in the statement that the bluish discoloration of the vagina is about the only certain early sign of pregnancy. In our opinion, it is a very fallible sign, for we have seen it markedly developed in connection with a number of conditions—retroflexion, fibroid, double oöphoritis with uterine dis-

placement—aside from pregnancy. For us, the sign *par excellence*, in the early weeks, is Hegar's, and it has never as yet failed us in fully fifty cases.

Further, in regard to dilating measures, we do not agree with the statement that the tupelo tent has no advantages over the laminaria. It has this advantage in particular, on which Mundé has rightly laid special stress, that it dilates evenly, whilst the laminaria dilates the least where it should the most—at the level of the internal os.

In the author's condemnation of intrauterine stems we fully coincide, reserving them for cases of strict necessity, and then being constantly anxious so long as they are in place. The uterus will not tolerate for long any foreign body, and will react inevitably, sooner or later, against the stem pessary. Happy the woman from whom it is removed at the beginning of uterine intolerance! Every gynecologist should remember that there are twenty-three undoubted cases of death on record as the result of the use of the stem. (See Chroback, Billroth's "Handbuch.") How many others are unrecorded? In regard to the curability of displacements, we believe our author is too sanguine. Few gynecologists can agree with him that "every movable retroverted uterus may be cured," and not one, we are confident, will accept the statement "if, at the end of a week, the uterus is found in a state of anteversion, the Hodge pessary may be removed," for the backward displacement is cured! In our experience, if the pessary can be permanently dispensed with at the end of a year, we consider the woman fortunate.

Of useful forms of the pessary, we miss the Thomas, Cutter, and the Mundé and Thomas retroflexion. Rheinstaedter, indeed, has found the Hodge and the Thomas useless, and prefers the Schultze retroflexion. We cannot understand this preference, for we would rather dispense with all forms than the Hodge or Albert Smith, the Thomas or Mundé bulb.

In regard to the use of pessaries in case of prolapsus, we would emphasize the author's statement that they all act by distending the vagina and that, consequently, larger and larger sizes have to be used, until finally we cannot introduce a sufficiently large one. Indeed, the only certain way of relieving prolapsus is by a combination of anterior and posterior colporrhaphy with Alexander's operation for stretching the round ligaments.

For the operation of colpoperineorrhaphy, Rheinstaedter prefers Hegar's method. A still better method, we think, is the Hegar-Simon. (For description see Mundé's "Minor Surgical Gynecology.")

Perineorrhaphy is advocated two months after delivery. This is none too soon in case the woman is not nursing. In the latter event, the operation should be postponed till the child has been weaned.

Under inversion, we would add to the described methods of reduction, Thomas' (by laparotomy), which should ever be resorted to before the mutilating procedure of amputation. To-day Thomas' method offers a better chance of success than when he first advocated it, owing to the greater perfection in operative technique.

As regards periuterine inflammatory trouble, using the term in its broad sense, Rheinstaedter lays stress on the absolute impossibility, in many cases, of sharply differentiating one or another

form. He is inclined to limit the term parametritis, or cellulitis, to those exudations which are detected on one or another side of the uterus, although even here he questions if there be not, at the same time, a peritonitis. In this view we believe him to be eminently correct, for the general tendency nowadays is to limit more and more the term cellulitis to those acute exudations which form after a miscarriage or during the puerperium, in particular in cases of localized septicemia. As for the treatment of acute peri- or parametritis, he advocates a sharp purge at the outset, and later, opium, antipyrin, or quinine. To these measures, which seem to us the rational ones, we would add the ice-coil over the abdomen, whenever the temperature rises above 102° F.

To pass now at once to the section of the work which deals with affections belonging, in especial, to the specialist's care, Rheinstaedter ranges himself on the side of the majority, in regard to the justifiability of vaginal hysterectomy in case of cancer. The limits which he places on the operation and the indications are essentially similar to those laid down by Mundé, and which we noticed at some length in our review of the ninth volume of the "*Am. Gyn. Trans.*" He has himself operated three times, but is unable, as yet, to make any statement in regard to definite results.

The chapter on Ovariectomy need not detain us. Our author has operated 28 times with 4 deaths.

The chapter on sterility is complete and of interest. In speaking of the methods by which the spermatozoa gain access to the uterus, he mentions, in favor of the supposition that during cohabitation the cervix opens and the semen is ejected into the cavity, the curious fact that Theopold, by placing his hand over the symphysis of his wife during copulation, distinctly felt the uterus rise up. Whether the uterus does so or not seems to us immaterial, seeing that the spermatozoon, having been endowed with the power of motion, the chances are it was for the purpose of enabling it to enter the uterus with or without extraneous assistance. It certainly often does so when simply deposited on the vulva, all the more likely, therefore, when placed in the vagina. As for the cure of sterility which seems dependent alone on the fact that, for some reason or other, the spermatozoa do not reach the uterine cavity, Rheinstaedter informs us that he has in many cases succeeded by simply mopping up the semen on a cotton-wrapped applicator, and passing this at once into the uterus. In this respect he has certainly been far more fortunate than other observers, even if we exclude the doubt, for a moment, that with his applicator he simply removed a thick cervical mucous plug, and that impregnation really took place after the next succeeding coitus. He tabulates fifty cases of sterility, in duration from a few months to fourteen years, where one or another method of treatment (regulation in the frequency of the sexual act, neutralization of acidity of vaginal secretions, dissection of the cervix, the applicator method, etc.) enabled him to effect a cure in from one month to two and a half years.

The concluding chapter sketches briefly what we know in regard to the neuroses and neurasthenia, and the drugs and methods applicable to the relief of these very stubborn manifestations.

We do not, by any means, pretend to have done justice to this book. We are satisfied that, with the exception of the few points we have criticised, it will meet with the approval of every

practical gynecologist. The practitioner, indeed the specialist, will find it worthy of possession, and of frequent reference. It is a credit to the specialty.

EGBERT H. GRANDIN.

BULLETIN ET MEMOIRE DE LA SOCIÉTÉ OBSTÉTRICALE ET GYNECOLOGIQUE DE PARIS, POUR L'ANNÉE 1885.—TRANSACTIONS OF THE PARIS OBSTETRICAL AND GYNECOLOGICAL SOCIETY FOR THE YEAR 1885. Paris: J. B. Baillière, 1886, pp. 252.

The work of this Society during the year 1885 was largely of an obstetrical nature. The contributions were generally of interest, and we mention the following as being the most elaborate: A Plea in Favor of Immediate Perineorrhaphy, by DR. DOLERIS; Tumors of the Sterno-cleido-mastoid in the New-born; by DR. CHARPENTIER; a very extended article on the "Positions assumed by Women of different Countries, during Labor," by DR. VERRIER, similar in scope to Engelmann's well-known articles on "Labor amongst Primitive Peoples," which appeared in this JOURNAL some years ago; a contribution to Uterine Erysipelas, by DR. BERNUTZ; a discussion on the Medical and Obstetrical Treatment of Eclampsia, opened by PROF. PAJOT; a contribution to the Theoretical Study of the Forceps, by DR. REY, being a plea in favor of the Tarnier forceps; a contribution to the study of Ovarian Dermoid Cysts, by DR. GUICHARD; an interesting case of Epithelioma of the Clitoris, reported by DR. POLAILLON, where amputation was performed with resulting cure; a case of artificially induced Labor in a Justo-minor Pelvis, by DR. AVRARD; a review of Carlos Clopatopzy's work on Rickets, by DR. LABUSQUIÈRE, wherein are reproduced a number of excellent illustrations of the deformity in women; the discussion of Doleris' paper on Alexander's operation.

It is apparent that the papers in this volume generally constitute valuable additions to the literature of obstetrics and of gynecology.

EGBERT H. GRANDIN.

VERHANDLUNGEN DER DEUTSCHEN GESELLSCHAFT FÜR GYNÄKOLOGIE.—TRANSACTIONS OF THE GERMAN GYNECOLOGICAL ASSOCIATION. Leipzig: Breitkopf & Härtel, 1886, pp. 350.

The first meeting of this Association was held in Munich in June last. It was eminently successful, both as to attendance of prominent gynecologists and as to the character of the papers presented. The most distinguished specialists of Germany were present, and associate members from Russia, Austria, Italy, and the United States took part in the discussion. This country was represented by Kelly, of Philadelphia, and by Mundé, of New York.

An abstract of the proceedings having already appeared in this JOURNAL, it is unnecessary to do more than to congratulate the members on the number and quality of the papers which were read, and to wish this new association a prosperous career.

E. H. G.

ÉTUDES CLINIQUES SUR LES MALADIES DES FEMMES.—CLINICAL STUDIES IN THE DISEASES OF WOMEN. By DR. HENRI SCHAFFIER, late interne at the Rothschild Hospital. Paris: G. Steinheil, 1886, pp. 276.

This little book aims to emphasize, in particular, the too often forgotten fact that the successful treatment of the diseases of women lies in a combination of general treatment with local—in

other words, that there is a medical as well as a surgical side to the question. It better subserves the purpose of allowing the author to ventilate a special hobby, which, briefly stated, is that many of the diseases of the female genital organs have their outcome from irritation or functional derangement of the nervous system, and it also enables him to elaborate what he calls "his theory of menstruation."

This theory may be stated as follows: Just before the rupture of the Graafian follicle and the escape of the ovum, the entire genital system is in a state of congestion, of erection, as it were. When rupture occurs, the excitation of the vaso-motor and vaso-dilator nerves has reached its maximum, as well as the erection of the genital organs. It is then that the terminal extremities of the uterine vessels, which exist in great numbers on the surface of the uterine mucous membrane, open slowly and gradually, and the blood, which has accumulated in these vessels as the result of the congestion, trickles out. The menstrual process then is dependent on the action of the motor, dilator, and constrictor nerves which proceed from the hypogastric plexus; "the theory differs entirely from the one which is generally accepted, and it necessitates a complete change in our interpretation of the pathological phenomena emanating from the female genital system, as well as in the treatment which is called for. If we once admit the preponderating influence of the nervous system in the production of menstruation, we are led to attribute to the exaggerated or lessened action of this same system all the anomalies of menstruation."

Such is Dr. Schaffier's new theory of menstruation. We will leave to the physiologist its refutation, and will remark only, in passing, that, before stating the theory, the author might have assured himself, in the first place, that the terminal ends of the blood-vessels do open on the surface of the uterine mucous membrane, and again of the existence of vaso-dilator and constrictor nerves in the uterine vessels.

Leaving theory and passing to practice, the author's aim, in the treatment of the various functional and organic disorders of women, is to tone down or to stimulate the nervous system in general, and thereby the hypogastric plexus in particular, which exercises such a predominating influence on the uterus. In this light he passes in review menorrhagia, dysmenorrhea, metrorrhagia, endometritis, hyperplasia, displacements, new-growths, etc., of the uterus, inserting under each heading illustrative cases where, far too frequently for good taste, it is made evident that cure only resulted when the patient consulted Dr. Schaffier, although previously she had been under the care of many other distinguished gentlemen, who had failed in reaching a like result because they did not recognize the far-reaching and all-pervading influence of the hypogastric plexus.

Aside from this mark of egotism, the author deserves credit for his attempt at emphasizing the medical side of treatment in the diseases of women, and the pages of his work are by no means devoid of much which is useful and instructive.

In case a second edition is called for, a little time might be given to the spelling of proper names, mistakes in which are far too frequent.

EGBERT H. GRANDIN.

DU CANCER UTERIN PENDANT LA GROSSESSE ET L'ACCOUCHEMENT.
—CANCER OF THE UTERUS DURING PREGNANCY AND LABOR. By
DR. PAUL BAR, obstetrician to l'Hôpital Tenon. Paris: Alex-
andre Coccoz, 1886, pp. 242.

This monograph will prove of decided interest to all who are called upon to treat frequently cases of uterine cancer. Whatever Dr. Bar attempts he does well, and he has spared neither time nor trouble to deduce, from a study of reported cases, conclusions applicable to the treatment of this disease in various stages, and in face of varied complications.

We cannot hope, in our limited space, to do more than state the divisions of the book, so that our readers may gain an idea of its completeness and of its worth. Limiting his subject, at the outset, to cancer of the cervix, for the reason that careful research has failed to reveal more than a single case of pregnancy associated with cancer of the body, and this a doubtful one, Bar states briefly our present knowledge in regard to the pathological anatomy of the disease, and then considers, in detail, the influence of cancer on pregnancy and labor, as well as the prognosis, and the treatment. One hundred and fifty-nine cases, collected from various sources, serve to illustrate the value of the different methods of treatment.

A very complete bibliographical index is at the end of a volume which, we repeat, is both valuable and instructing.

EGBERT H. GRANDIN.

DIE ENTSTEHUNG, DIAGNOSE UND CHIRURGISCHE BEHANDLUNG DER
GENITALTUBERCULOSE DES WEIBES.—THE ORIGIN, DIAGNOSIS, AND
SURGICAL TREATMENT OF TUBERCULOSIS OF THE FEMALE GENITAL
ORGANS. By ALFRED HEGAR. Stuttgart: Ferdinand Enke,
1886, pp. 60.

Professor Hegar was the first to reach the diagnosis of tubercular disease of the Fallopian tube, to remove it by laparotomy, and thus to cure his patient. In the following pages, he gives a succinct account of his pathological studies and operations in the field of genital tuberculosis, and he appends the histories of six cases of the disease where he operated, and of two where, the diagnosis being in doubt, he refrained from interference. The results in the six cases were: one patient died; the second remained well for six months and then passed from under his observation; the third suffered recurrence in the lungs in six months; the fourth was in a far better condition three years after operation than before; the fifth and sixth are apparently perfectly well.

The differential diagnosis of tubercular disease of the genital organs from other affections is very clearly stated, as well as the theories in regard to the manner of entrance of the specific agent into these organs.

The monograph will well repay perusal.

E. H. G.

ERKENNTNISS UND BEHANDLUNG DER FRAUEN-KRANKHEITEN IM ALL-
GEMEINEN.—THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF
WOMEN IN GENERAL. By DR. CARL CONRAD THEODOR LITZMANN,
Professor of Gynecology at Kiel. Berlin: August Hirschwald,
1886, pp. 82.

This pamphlet contains four lectures delivered at the Kiel clinic

in the summer session of 1885. They are of special interest because, with them, the distinguished professor ended his labors as a teacher.

The first and second lectures concern the methods of obtaining the rational and the physical signs of the diseases of women; the third sketches, in particular, those diseases which call for surgical treatment, and can only thus be cured, and states briefly the surgical methods at our disposal to-day; the fourth, and concluding lecture relates to minor surgical gynecology, such as applications to the uterus, the use of the sound, the tamponade of the vagina, etc.

These lectures are, in general, in accord with modern methods of treatment, and stamp Professor Litzmann as a man not too old to learn, even if he finds himself too old to continue to act as teacher.

E. H. G.

ABSTRACTS.

1. **Schultze (Jena): Total Extirpation of the Cancerous Uterus** (Reprint from *Deutsche Med. Zeit.*, Heft 61, Geburt. 61).—The remarks in this paper are founded on personal experience in twelve cases of total extirpation—three by laparotomy and nine by the vagina. The three Freund cases were fatal, seven of the nine kolpohysterectomies were successful. These cases are briefly reported in abstract, and S. then proceeds to state his deductions in regard to the various operative methods of treatment of uterine cancer. The mortality from the abdominal operation being stated as high as high as 71 per cent, and that from the vaginal operation varying from 25 per cent to 26.3 per cent, it is evident that, where the operator can accomplish the same object by the one operation as by the other, the choice should lie with the latter. Cases will, however, occasionally present themselves where, owing to the size of the uterus, kolpohysterectomy is not possible, and the Freund is alone possible, and then the great indication is to shorten the time during which the abdomen lies open as much as possible. S. is of the opinion that this object may be attained, and the fatality of Freund's operation lessened, by loosening the cervix as high up as possible from the vagina before resorting to abdominal section. In general, the indications for extirpation of the cancerous uterus are limited, on the one hand, by the possibility of removing the entire diseased mass without entire removal of the uterus, and, on the other hand, by the fact any treatment must be purely palliative, owing to the fact that the disease has extended beyond the uterus, and hence cannot be entirely eradicated. In one group come those cases where removal of one lip of the cervix, the amputation of the entire cervix either infra- or supravaginally, the amputation of the body of the uterus by laparotomy, in those rare cases where the body of the organ is alone affected. Where any of these partial methods will suffice, they are, of course, to be preferred. In any event, however, before the nature of the operation is determined upon, careful diagnosis of the extent of the disease must be reached, and this is only possible by conjoint

examination, under anesthesia. When it has been determined that the disease of the cervix has extended above the reflexion of the peritoneum going to form Douglas' fossa, then total extirpation offers the only possible chance of radical cure. In case of carcinoma limited to the corpus uteri, the theoretically rational operation is amputation of the body of the uterus by abdominal section; but statistics teach us that the danger from this operation is far greater than from vaginal extirpation. Where the uterus is small enough, therefore, kolpohysterectomy should in such case have the preference. Whilst amputation of the body of the uterus by the vagina has never been attempted, S. suggests its possibility by leaving the cervix attached to the bladder through the anterior reflexion of the peritoneum. Where there is question of total extirpation, the great difficulty will ever be to determine the limitation of the disease. Wherever the uterus is fixed, and wherever, on careful examination, infiltration outside of the uterus is detected, total extirpation will serve no good purpose. When the disease has invaded the broad ligaments, recurrence after total extirpation is a necessity. Still the general condition of the patient is so much bettered that S. is of the opinion that the operation is justifiable even if recurrence within a few months is certain. Unfortunately, it is exceptional that an operator sees his cases at an early enough time to hold out hopes of radical cure. The majority of patients suffering from uterine cancer do not consult the surgeon at an early stage of the disease, the symptoms from which they complain either being slight or else not recognized by the family physician as of importance; often such patients are subjected to a course of local medication and douches, when what is urgently demanded is operation. There exists, further, in many minds the belief that cancer is incurable, and there exists a deplorable ignorance amongst physicians of the means of diagnosis of uterine cancer. Often the disease is recognized, but precious time wasted in cauterization and in curetting. Every physician should recognize the fact that hemorrhage from the vagina calls for careful local examination, particularly if the patient has passed her thirty-sixth year. In conclusion, S. states the fact, derived from careful statistical data, that of 10,000 women, between 46 and 50 years of age, 44 died of uterine cancer.

E. H. G.

2. Schultze (Jena): On Palpation of the Pelvic Organs (Reprint from *Centralbl. für Gyn.*).—This paper concerns the palpation of certain of the pelvic muscles. In a former paper, S. called attention to the ease with which the psoas muscle could be palpated bimanually, and laid stress on the fact that it was a valuable landmark of the ovaries. S. has often found that pain evoked on pressure along the inner margin of this muscle accompanied chronic ovaritis, and was also symptomatic of chronic parametritis. Occasionally also this muscle, in a state of contraction, may lead to error, in that it simulates a pathological tumor. When the muscle is not contracted, the pelvic walls may be felt through it; but when the thigh is flexed, the muscle is felt hard, and is, on deep pressure, painful. There are two other pelvic muscles which may be readily palpated, and may, as landmarks, assist the gynecologist in diagnosis. These are the obturator internus and the pyriformis. The former is felt as a broad, prominent swelling along the latero-anterior wall of the pelvis, particularly when the thigh is strongly rotated outward.

Pressure on this muscle is rarely painful, but pressure on the obturator nerve, which lies between the layers of the muscles over the obturator foramen, usually evokes cramp-like pains in the thigh. The pyriform muscle is to be felt only with difficulty in fat women with shallow vaginæ; but where the vagina is deep, this muscle may readily be palpated. This muscle does not contract so actively as the obturator on forced outward rotation of the thigh. Pressure on it, when contracted, evokes great pain, possibly through extension of the pressure to the sacral nerve. This muscle may lead the examining finger into error. S. records a case where, in a corpulent woman suffering from chronic metritis and parametritis, the contracted and sensitive muscle simulated at the first examination an adherent, posteriorly displaced ovary. (A woodcut makes apparent the ease with which the pyriform muscle, in particular, may suggest to the examiner a tumor.) Differential diagnosis is, of course, readily reached by the measures necessary to cause these muscles to contract and to relax.

E. H. G.

3. Prochownick: On Diastasis of the Abdominal Muscles during the Puerperium (*Archiv f. Gyn.*, XXVII., 3).—The author's observations in England have taught him that diastasis is by no means so common as it is in Germany, and this immunity of Englishwomen he deems dependent on the fact that it is customary with them to be carefully bandaged. He has therefore become a convert to a method which tends to prevent an occurrence which may be fraught with danger to the patient. He mentions two personal cases where there resulted incarceration of the intestines in the diastatic opening. Not only the recti, but also the oblique and transverse muscles may enter into the formation of the diastasis. These muscles lose their tonicity, and eventually atrophy through pressure. The diastasis may be the result of three causes: 1. Over-distention of the muscles—the muscles simply lose their elasticity without the occurrence of any alteration in structure. 2. Simple relaxation—resulting in diminished tonicity, and moderate atrophy from pressure of the transverse muscles, without implication of the longitudinal. 3. Great relaxation—a general relaxation of all the muscles, followed by atrophy of the tendons and muscles which enter into the formation of the abdominal parietes. These different varieties are then discussed at length, and the various resulting symptoms noted. The bandage recommended is then described, as well as its method of application.

E. H. G.

4. Krukenberg: The Cause of Placenta Marginata (*Archiv f. Gyn.*, XXVII., 3).—The cause of this form variety of placenta is unsettled. Küstner has recently studied the subject, and concludes that placenta marginata is the result of disproportionate development between the uterus on the one hand, and the placenta on the other, the latter increasing more rapidly than the uterus and its decidual lining. K. has had the opportunity of examining the placenta in two cases of twin pregnancy where the like placenta form existed, and believes that it is rather due to the compression exerted by the membranes of one fetus on those of the other. In case of single pregnancy, the same compression may be the result of the presence of an abnormal amount of liquid in the decidual

sac, the liquid being due to an inflammatory condition of the decidua, that is to say, to an endometritis. E. H. G.

5. C. Braun: Statistics of the First Vienna Obstetrical Clinic, in Connection with Antisepsis, during twenty-nine years (*Wien. Medicin. Woch.*, 35, 1886).—The mortality percentage, in this clinic, from puerperal diseases during the years 1863 to 1880, was 13 per 1,000, and during 1881 to 1885, only 4 per 1,000. The statistics of the entire material, as regards morbidity and mortality, are included in elaborate table. We resume here simply the essentials of the conclusions in regard to the special utility of antiseptics: 1. Septic fever can break out during labor as the result of putrefaction in the genital tract. 2. This is quickly fatal after labor, the symptoms being endometritis and tympanites uteri. 3. It is contagious to lying-in women in the neighborhood, and is one of the most frequent of all causes of puerperal epidemics in maternity hospitals. Timely diagnosis and isolation, therefore, are of the first importance. 4. The removal of putrid masses from the uterine cavity is a rational procedure. A dull curette is an effective instrument for this purpose. 5. Intrauterine irrigation, after such manipulation, is of great value. 6. In case of secondary puerperal hemorrhage, due to the retention of placenta or of membranes, immediate removal and careful irrigation of the uterine cavity usually give excellent results. 6. As antiseptic agents, either carbolic acid solutions or weak solutions of sublimate (1:4,000) may be used. Stronger solutions of sublimate may result in symptoms of poisoning. 7. Thymol is a further agent which will answer well. 8. The best results were obtained, however, in cases where, after irrigation with carbolic, sublimate, or thymol, an iodoform suppository was placed in the uterus or in the vagina. Never were symptoms of iodoform poisoning seen. 9. At the beginning of septic infection, emptying of the uterus, irrigation with thymol, and prolonged use of iodoform have given excellent results. 10. The best method of disinfecting the hand is to place it in a sublimate solution.

During these 29 years, 7,984 students were in attendance at the clinic.

E. H. G.

6. G. Braun: On Reflex Gastric Neuroses due to Uterine Disease (*Wien. Medicin. Woch.*, 41, 42, 1886).—B. emphasizes in this paper the intimate sympathetic connection existing between the stomach, in particular, and diseases of the female genital organs. Reflex neuroses, indeed, having their outcome from the sexual system, have been, time and again, noted by specialists in the various branches of medicine. From the side of the uterus it is well known that the various displacements and distortions have a marked reflex influence on the nervous system. The same holds true of periuterine exudations and lacerations of the cervix. The necessity of careful examination of every organ of the body before making a diagnosis as to the special cause of neurotic symptoms cannot be too strongly impressed on the general practitioner as well as on the specialist. B. reports a number of interesting cases in his paper which prove conclusively the dependence of functional gastric derangement on disease of the uterus. In the first case, the patient had been treated for a number of months by various gentlemen for chronic gastric catarrh without avail. Finally, she consulted B. who found simply an abnormal mobility of the uterus. For the relief of this he inserted a Braun-Hodge

pessary, and the neurotic symptoms disappeared. In a second case, almost continuous vomiting had existed for nearly two years, and the patient had been subjected to varied medication without relief. On examination, B. found a lacerated cervix, repaired the rent, and cured the patient of her neurosis. In a third case, vomiting was a symptom which had lasted for a number of months, whenever the patient assumed the erect position. The uterus was found heavy, subinvolved, and sagging downwards. Pessaries, rest in bed, the hot douche, were tried without much benefit, when finally B. amputated the vaginal portion of the cervix. As a result of the operation, the depth of the uterus decreased from five to four inches, and on being discharged, the neurosis had disappeared.

(These cases are very significant, although, doubtless, the majority of practitioners have met with the like. We believe we are right in the statement that the connection between uterus and stomach, as an explanation of neuroses, is generally overlooked. In this JOURNAL for November, 1884, a striking case of reflex spinal neuroses will be found reported by Mundé. The patient had been bed-ridden for about five years on account of paralysis of the lower limbs. She was but twenty-five years of age, and eminent specialists in neurology had exhausted their efforts for her relief. Although there was no special indication of organic disease of the uterus or appendages, and the diagnosis of chronic myelitis in the lumbar region of the cord had been made, the patient insisted so strongly on oöphorectomy as a last resort, that M. performed it, with the result of restoring the patient to health and usefulness. She is, to-day, perfectly well and active. We recall this case here, because it strikingly indicates what form neuroses may assume, and what unexpected results a forlorn hope may sometimes yield.)

E. H. G.

7. O. Hoehlmann: The Histories of Thirty-five Operations for Urinary Fistulæ Performed, from 1885 to 1886, at the Breslau Clinic (Breslau: Otto Gatsmann, 1886).—In this thesis for the doctorate, H. relates in detail this interesting series of operations. There were 26 vesico-vaginal fistulæ with 21 cures, the number of operations in each case varying from 1 to 8, and one case required episiokleisis. One case of superficial vesico-utero-vaginal fistula, with cure, and three of deep with cure; two of vesico-cervical fistula with cure; one of urethro-vaginal fistula with cure; one of uretero-vaginal fistula cured by nephrectomy.

E. H. G.

ITEM.

PROF. LUDWIG BANDEL, whose obituary appeared in the January number, is not dead, after all. His sudden, unexpected illness (melancholia) soon after his arrival in Prague originated the report of his death, and caused the publication of his obituary in a German contemporary, and from the latter in this JOURNAL. We are much gratified to hear that he is in a fair way to recover and resume his labors, and congratulate him on the unusual distinction of being able to read his own obituary.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] MARCH, 1887. [No. 3.

ORIGINAL COMMUNICATIONS.

A NEW EXPLANATION OF THE RENAL TROUBLES, ECLAMPSIA, AND OTHER PATHOLOGICAL PHENOMENA
OF PREGNANCY AND LABOR.¹

BY

A. F. A. KING, M.D.,

Prof. of Obst., etc., in the Med. Dept. Columbian University, Washington, D. C., and in the Univ. of Vermont; Prest. of the Washington Obstet. and Gynec. Soc., etc.

MAURICEAU spoke of pregnancy as a nine months' malady, and another author wrote, as we are reminded by Dr. Parvin ("Sci. and Art of Obstet.," p. 210): "Woman only escapes being sick twelve times a year by having an illness which lasts nine months." While these statements are partially true with regard to some women, we know there are others who enjoy a remarkable immunity from illness during gestation and express themselves as feeling better, every way, than they did before conception took place.

But *why* some women are well, and others ill during pregnancy, is, in many cases at least, difficult to explain. Especially is this true with regard to the renal troubles of gestation and their accompanying pathological phenomena.

It is the purpose of this paper to present a new explanation (or what I *think* is so) of the etiological relation between

¹ Read (in part) before the Wash. Obst. and Gynec. Soc., Feb. 4th, 1887.

pregnancy and the nephritic derangements that so often attend it.

If I am right with respect to this matter, it will be evident that many other of the pathological conditions, belonging both to pregnancy and labor, may be referred to the same explanation. This paper, therefore, will *not* deal with kidney difficulties *only*, but embrace other correlative pathological states.

To further the end in view, I must first call attention to certain preliminary considerations which it will be desirable to bear constantly in mind. These may be briefly stated as follows:

1. *We must study Nature.* As in all other departments of medical science, so in obstetrics, the key to progress will be found in a studious observation of *natural cases* and a *correct interpretation* of the things observed. While this has already been done by many faithful and enthusiastic clinicians, the results are still deficient and the work incomplete. In fact, our clinical cases of pregnancy embrace chiefly *unnatural cases*—those that exhibit disease. “The well need not a physician, but those that are sick.” In private practice, certainly, pregnant women who suffer *no ills whatever*, usually employ no physician; much less do they submit to the vaginal, abdominal, and other examinations which a scientific investigation of their cases would require. Yet these natural cases are, of all others, those which it is most requisite to understand, and which, it may be supposed, would best repay investigation.

2. *Physiology and pathology must be separated.* To define the normal from the *abnormal* has always been a prime object in the study of disease, and while the statement of so simple a proposition may here seem superfluous, it will, I think, appear less so when we realize that this attempted definition, in so far as it relates to pregnancy and parturition, has hitherto resulted in eminent failure. To formulate our definition, we require a *normal model*, with which abnormal variations may be compared. But where shall this model of normality be found, especially among highly civilized communities? Models of approximate health may, however, be observed. Some are normal in some respects, others in others. We may at least take the normal ingredients from each and put them together, bit by bit. To do so will require the study of one thing at a time. Then, too, we must be sure that our criteria for judging what is normal, and what is not, are fair and just. In this matter ob-

stetricians seem to be influenced, in a measure, by some such principle as "all is well that ends well." A clinical report often finishes with the remark: "mother and child both did well;" but nothing may be said of the untold agonies and dangers endured before the final ending in "recovery" was accomplished. In order to be normal, there should have been *nothing* to recover from. So again, that which occurs *often* is considered normal, while disease is held to be *exceptional*. This also is wrong, or may be so; for if the etiological factors of disease are more frequently present than absent, the abnormal cases may exceed in number the normal ones. On the whole it will, I think, appear farther on (and no matter from what cause or causes) that our leading masters and teachers of obstetric science have in several instances not only confounded the normal and abnormal together, but have committed the additional mistake of calling that normal which is in reality *abnormal*, and *vice versa*, that which is really *unnatural* they have considered natural. The differences of opinion with regard to disputed questions, so often expressed by equally credible and reliable authorities, and based upon equally accurate observations, have, I think, arisen from the observers on one side having met with and noted normal cases, and those on the other abnormal ones, without either being aware of the mistake. At least such must be the conclusion if the views to be expressed in this paper are correct.

3. *The natural conditions of pregnancy must be separated from the natural conditions of labor.* At first sight this again would appear to be a superfluous admonition, yet I shall endeavor to show that the error of confounding the two together has been repeatedly committed, by the most recent and eminent authorities, and with the most disastrous results in impeding the progress of obstetric knowledge. So far from the natural conditions during the two periods being the same, they are not only different, but opposite, for the ends to be attained are directly contrary to each other. It is the office of a pregnant womb to retain the ovum; that of a parturient womb to expel it. The conditions normal in the one case can scarcely be normal in the other. The relevancy of this statement to the matter in hand will be more evident farther on.

With these preliminary reflections, I proceed to the discussion of the etiological relation evidently existing between pregnancy

and the albuminuria, nephritis, anasarca, uremia, eclampsia, etc., that so often accompany it.

4. *Need for further knowledge.* While many theories have been presented in explanation of the cause of renal troubles, etc., during pregnancy, no single one has thus far been universally recognized; none has been so distinctly proven as to merit universal recognition. Even some of our most recent writers have no hesitation in confessing their ignorance upon this subject. Bartels writing in Ziemssen's Cyclop. (Vol. XV., p. 309), says: "For the present there is nothing left for us but to record the fact that parenchymatous inflammations of the kidneys and the liver may be developed during pregnancy, and to confess that we do not know what causes them." On page 306 of the same volume he quotes Rosenstein ("Die Pathologie und Therapie der Nierenkrankheiten," 2te Auflage, 1870, S. 62) to the effect that the pressure occasionally exerted by the gravid uterus upon the renal veins occurs "under conditions that are not thoroughly known to us." Dr. Althaus ("Dis. of the Nervous Syst.," 1877, p. 77) says: "The cause of the appearance of nephritis before and during parturition is still obscure." Even so recently as Dec., 1886, at a meeting of the New York State Med. Association, during a discussion participated in by many of the leading obstetricians of New York, Dr. T. G. Thomas is reported to have said (*Journ. of the Am. Med. Assoc.*, Dec. 4th, 1886, p. 640): "That while we are ignorant of the method by which the puerperium induces this form of nephritis, we have abundant evidence of the fact that, so soon as utero-gestation ceases to progress, the renal trouble, as a rule, diminishes and soon disappears."

Many other authors acknowledge the same kind of bewilderment.

Under these circumstances, there would seem to be ample room for the introduction of some new ingredient within the heterogeneous tangle of ideas comprising our present views upon this subject. In our day, so remarkable for scientific and literary progression, when numerous minds are dwelling long upon the same questions, and prolific printing presses, pregnant with the new conceptions of medical authors, are daily giving birth to nascent ideas, one may well hesitate before ascribing to himself the sole paternity of any new conception in the domain of medicine. Nevertheless, truth compels me to say that I have sought

in vain through a good part of the literature of this matter for any reference to the suggestion it is my purpose to introduce.

5. *The cases to be considered.* The cases I propose especially to consider are those occurring, for the most part, in primiparous women, during the later months of pregnancy, which usually begin with edematous swelling of the feet, face, and hands, with or without general anasarca, attended with scanty, high-colored, albuminous urine, containing renal epithelium, tube casts, and blood-corpuscles, and which sooner or later may develop headache, gastralgia, nausea, vomiting, derangements of the special senses and the usual phenomena of uremia, ending (if not relieved) in eclampsia, premature delivery, etc., and sometimes in death of both child and mother. These are the ordinary cases of uremic eclampsia occurring during pregnancy or parturition. That all the cases should not present *exactly* these phenomena, or that the phenomena themselves should not occur exactly in this order of sequence, will make but little difference, for the etiological views to be proposed will cover one variation of the disease as well as another. Convulsions, however, following severe hemorrhage or profound anemia from other causes, and those of a purely hysterical character, and again those due to previous chronic epilepsy, should of course be excluded, for, unless they occur as accidental complications of the uremic kind, they belong to a different category.

6. *Theory and practice.* While it must be confessed, and with regret, that the substance of this paper is, in the main, theoretical, for pronounced cases of albuminuria going on to uremia and eclampsia are not of frequent occurrence, yet I hope to present the theory with sufficient clearness to secure for it such future observations by others as may be required for testing its correctness or proving its fallacy. While my facilities for clinical observation have been limited, I am still able to present a series of cases, twenty-one in number, which will illustrate the methods of examination to be suggested, and will also contribute negative evidence in support of the theoretical views propounded, that is to say: the cases (thus far examined¹) *not* having albuminuria have been found *not* to present the conditions which the theory states produce albuminous urine, etc. So far the negative evidence thus furnished has been uniformly in favor of the theory. I hope the publication of my views may

¹ Up to Jan. 27th, 1887.

increase the number of examiners in the direction indicated, so that positive evidence also may be supplied sooner than my own limited field of observation would be likely to supply it.

7. *The theory briefly stated.* Disturbances in the renal circulation and renal functions are produced chiefly by pressure of the gravid uterus upon the abdominal aorta or its branches, or upon the vena cava or its branches, or upon both or all of these, *in consequence of the child and womb not maintaining during pregnancy their normal lateral obliquity above the pelvic brim.* This is the pith of the whole matter; and yet one brief statement of this sort can hardly convey the whole theory without further additions, explanations, or qualifications. This statement, however, will constitute the main text and central idea of what is to follow. Now it is evident, before we can proceed one step farther, it will be necessary to define:

8. *The normal attitude of the child in utero during pregnancy, before labor begins.* The definition I will now propose, it must be distinctly understood, does *not* refer to the attitude or presentation of the child during *labor*, but during pregnancy before labor begins. It is as follows: *The normal "presentation" and "position" of the fetus in utero during pregnancy, before labor begins, is the dorso-anterior position of an oblique presentation* (commonly, inexactly, and erroneously termed a "transverse" presentation). *A head presentation* (as this expression is usually meant to imply presentation of the head "toward the centre of the canal of the pelvis and os uteri" with the long axis of the child parallel with the axis of the plane of the pelvic brim), *is abnormal during pregnancy, etc.* We must next consider the

9. *Normal position of the gravid uterus.* The normal position of the gravid uterus, *in abdomino*, during the later months of pregnancy, before labor begins, is the lateral oblique position, corresponding, more or less, with the oblique position of the child; the fundus uteri, containing the pelvic extremity of the fetus, being usually directed towards the right side (exceptionally to the left) of the lumbar vertebrae. (It should here be observed that while this definition applies to the "position" of the uterus as demonstrated by *abdominal palpation*, the apparent "position" is in part really due to the *shape* of

¹ I use these terms as ordinarily employed by obstetricians when discussing the mechanism of labor.

the organ as it conforms to the shape of its contents ; for while the fundus is towards one side of the mother's spine, the os and cervix may still be found, on *vaginal examination*, with but little or no lateral deviation from the median line.)

Under caption 7, I have stated the renal troubles, etc., are produced in consequence of the child and the womb not maintaining their normal lateral obliquity "*above the pelvic brim.*" These last four words, further elucidated, lead us to discover a

10. *Contrast between the abdominal and pelvic cavities.* When the womb and child, after the fifth month of pregnancy, have risen from the pelvic cavity into the abdominal cavity, in this latter they should remain until the advent of labor. The pelvic canal, in so far as it is concerned with reproduction after this period of gestation, is simply, or chiefly, the *channel of exit*, and no part of the child should again enter here until it is ready to go out and be born ; while the abdominal cavity, above the pelvic brim, is the *cavern of residence*, and here the child should remain, and remain in its entirety, until the proper time for its exit has arrived, or is immediately impending. The relevancy of this statement, and the importance of recognizing its truth (if it be true), will appear farther on, when I shall call attention to an exactly opposite statement almost universally made by modern writers, viz., that in primiparous women the head descends through the brim into the pelvic cavity even as early as three months before labor begins, and which is allowed to pass as a *normal* condition in primiparæ. And this leads me to remark, that

11. *Normal reproduction is the same in primiparæ as in multiparæ.* The whole process of procreation, and the normal position of child and womb, as previously stated, are intrinsically the same in primiparæ as they are in multiparæ. *Under normal conditions*, there is no reason why any difference between them should occur, and none, I think, will be observed—certainly no such exorbitant difference as that in one (multiparæ) the head should remain during pregnancy "upon one of the iliac fossæ," and in the other (primiparæ), "descend into the pelvic cavity three months before full term," for, be it remembered, the same high authorities who, we shall see, admit the difference just stated to be normal, also teach that descent of the fetal head into the pelvic cavity is (not even the *first*, but) the *second* stage or step in the "mechanism of labor." Can it be that this

second step in the mechanism of labor *normally* occurs, in primiparæ, three months before it is time for labor to begin! I should rather say it is abnormal. If the oblique presentation, with the lower end of the fetus resting upon an iliac fossa, be normal for one, it is normal for the other. We believe it to be so in both.

12. *Natural change of presentation before labor. Probable exciting cause of actual labor.* Just before the end of pregnancy, the uterine contractions premonitory of "actual labor" serve to alter the long axes of womb and child from their oblique position, and bring them sufficiently in line with the axis of the plane of the superior strait as to allow the lower end (usually the head) of the fetal ovoid, covered of course by the elastic walls of the supra-cervical segment of the womb, to slip off of the cushioned ledge of iliac fossa on which it has reposed, and, now more nearly opposite the centre of the os uteri, commence its descent into the pelvic cavity. This change in the presentation of the child is probably one of the direct exciting causes of actual labor. It is scarcely necessary to add that, when the premonitory contractions, or actual labor pains, both fail, from some exceptional circumstances, to change the axis of womb and child from their oblique position, and which happens once in about 230 cases, then the *abnormality* of an oblique presentation *during labor* will result.

13. *Obliteration of cervical canal, and Bandl's ring, during the late months are abnormalities.* When the womb and child maintain during pregnancy their normal lateral obliquity, the canal of the cervix uteri, from the external to the internal os, will remain unobliterated until full term: and which is the normal condition both for primiparæ and multiparæ. Under the same normal circumstances, the great thinning of the lower uterine segment, the tearing of the decidua mucosa membrane, the "formation of a new cervical canal," and the other tissue changes observed by Bandl, will be absent *during pregnancy*. They are *abnormal*. They may nevertheless occur *during labor* from *abnormal* mechanical obstruction to delivery. None the more, however, does this bring them within the domain of *physiology*.

14. *When the normal obliquity of womb and child is maintained during pregnancy, there will be no injurious compression upon any blood-vessels.* So long as the child remains

poised obliquely, like a slanting beam, above and partly across the pelvic brim, certainly nothing *below* the brim will be compressed: that is apparent. Nor, certainly, while thus obliquely directed, will the fundus uteri and its contents reach high enough to touch the *renal* blood-vessels, which lie on the second lumbar vertebra. It is, therefore, chiefly with the vessels of the intermediate space—the aorta and vena cava and their branches—that we have here to deal with. Let us recall the situation of these vessels. I quote almost *verbatim* from Gray's Anatomy (2d Am. Ed., pp. 418, 428, 436, 474, 475). The abdominal aorta descends “a little to the *left* side of the vertebral column, terminates on the *left* side of the body of the *fourth lumbar vertebra*, where it divides into the two common iliac arteries.” “This point corresponds to the left side of the umbilicus, and is on a level with a line drawn from the highest point of one iliac crest to the other.” The common iliaes, diverging from the termination of the aorta, pass downwards and outwards to the margin of the pelvis, and divide opposite the intervertebral substance between the last lumbar vertebra and the sacrum. The external iliac passes obliquely downwards and outwards along the inner border of the psoas magnus muscle to the femoral arch. The ascending vena cava is in front of the spine, on the right side of the aorta. The common iliac veins unite “upon the intervertebral substance between the fourth and fifth lumbar vertebræ.” Thus we find these large vessels and their primitive divisions disposed over the most projecting part of the lumbar curve, the aorta being a little on the left of the median line—the *fourth* lumbar vertebra being the *most* prominent in the anterior direction. A transverse, or obliquely transverse, section of the abdominal cavity at this level will exhibit at its central posterior part a sudden convex projection made by the lumbar spine, with two moderate-sized lateral concavities which pass forwards to unite in forming the larger concavity of the anterior abdominal wall. The included space will be somewhat reniform in shape, but it will more nearly resemble the surface displayed by making a median, longitudinal, antero-posterior section of a fetus in utero, provided that the head, spine, and extremities be flexed, as we usually find them. The section of a woman's abdominal cavity, and the section of a fetus thus displayed, will exhibit a striking resemblance to each other; and, when the child's back

is directed anteriorly, which it usually is (for in all presentations the dorso-anterior positions are most frequent, as well as most desirable), and the long axis of its body is placed obliquely across the woman's abdomen, with its head, spine, and extremities flexed—under these circumstances the convexity of the child's dorsal surface and of the anterior uterine wall will fit well within the concave surface of the anterior wall of the abdomen, while the deep and sudden sulcus between the flexed knees and forehead of the child (see plate 72, p. 125, Leishman's *Obstet.* 3d Am. Ed.), covered only by the ductile web of the elastic uterine parietes, cushioned inside by liquor amnii, *will afford space, posteriorly, for the projecting lumbar vertebræ and the large blood-vessels placed upon them.* At least that portion of the womb in contact with the lumbar vertebræ will contain no hard part of the fetus by which injurious compression of the blood-vessels could be made.

It will be further observed that the lower part of the gravid womb containing the fetal head, when posed upon the left iliac fossa, or rather upon the psoas and iliacus muscles with which that fossa is upholstered, will, in consequence of the *downward and forward inclination* of both muscles and fossa, constantly tend to glide forwards, and *away* from the *left* side of the woman's spine—*away from the aorta and iliac vessels, etc.* At the same time the pelvic end of the fetus will be directed obliquely upwards and to the *right* side of the lumbar spine, where there is *no important vessel to be compressed.*

The long axis of the fetus, when thus obliquely placed, will occupy a *trebly* complex diagonal position. It will be *oblique to the horizon*, the breech being higher than the head; *oblique laterally*, the breech to the right, the head to the left; and *oblique antero-posteriorly*, the head being more in front, the breech more behind. By this complex diagonal position the womb and child make the very best use of the limited space which the abdominal cavity affords, crowding of and pressure upon neighboring structures being prevented.

When, on the contrary, the womb and fetus maintain a vertical position (*i. e.*, not vertical to the horizon, but with their long axes in line with the axis of the plane of the pelvic brim), they are continually crowded for space by their abdominal surroundings, and the direction of this crowding is chiefly downwards and backwards—in fact towards the lumbar spine and the blood-

vessels that lie upon it. And finally the lack of space for the long axis of the womb compels its lower segment, containing the child's head, to descend *prematurely* out of the abdominal cavity into the pelvic one, which occurs most often in primiparae, and with all the disastrous results to which this abnormality sometimes leads, as will be shown hereafter.

It should not be overlooked that the normal attitude of the child, besides being oblique as stated, is also *dorso-anterior*. Should the back of the child be directed towards the mother's spine, the spinal curvature of the fetus (which is observed from the earliest stages of embryonic development), so far from agreeing with a transverse section of the woman's abdominal cavity, will *disagree* with it, for the convex surface of the child's back will impinge upon the convex projection of the mother's lumbar vertebræ, and thus the tendency to injurious pressure upon the aorta, etc., would be increased.

15. *Will pressure of the gravid womb upon the aorta, vena cava, and their branches produce renal trouble?* On this point there has been much difference of opinion. Many writers speak of pressure upon the *renal veins*, or upon the *kidneys* themselves, as if these received the brunt of uterine pressure; but I think, after the very able disputation of this view by Dr. Bartels (Ziemssen's "Cyclop.," Vol. XV.) we can no longer admit the supposition.

It will scarcely comport with my present purpose to review the literature of the question proposed at the beginning of this section. It must suffice to accord it an affirmative reply, for which ample authority might be adduced. Nor is it difficult to understand how the cause (uterine pressure) produces the effect (renal disturbance). The current of blood in the aorta being retarded must necessarily lead to tension of that vessel and its branches above the point of compression, and among the first of these branches to feel such tension must be the renal arteries, placed only a very short distance above, and being also of comparatively large calibre; while compression of the vena cava below, retarding the upward current of venous blood, will retard the exit of blood from the kidneys through the renal veins. Hence we might suppose, *a priori*, that the renal congestion would be either active or passive, according, respectively, as the aorta or vena cava were most forcibly compressed.

But another factor that may certainly influence the function

of the kidney, and add to the vascular disturbance produced by pressure upon blood-vessels, is compression of the *ureters* by the gravid womb. Löhlein found dilatation of one or both ureters in twenty-five per cent of the deaths from puerperal eclampsia, and in three per cent only of deaths from other causes (Barnes' "Obstet.," p. 292, quoting from *Deutsche Med. Zeitung*, 1883).

Admitting ureteral compression as a cause of renal disturbance, by no means necessitates the exclusion of the vascular compression before stated; in fact, it is more than likely that when one occurs, the other will also, and from the same cause. But I must here repeat with emphasis that, when the child maintains its normal lateral obliquity above the pelvic brim, and its dorso-anterior position, *nothing* will be injuriously compressed; while under opposite circumstances, when the head presents during pregnancy at the brim, and descends into it three months before full term, *all* neighboring canals, whether arteries, veins, ureters, or lymphatics, may receive disastrous pressure and interference with the transit of their contents. Though not altogether belonging to this section, it may here be remarked that pressure of the gravid womb upon the receptaculum chyli and upon the lymphatic vessels from the lumbar glands that empty into it (and which lie upon the second, third and fourth lumbar vertebræ), has perhaps not received the attention it deserves, in contributing to the faulty nutrition, hydremia, and anemia, often found to exist in some pregnant women. But these, again, will escape pressure when the child is normally placed as before stated.

16. *The diagnosis of aortic and vena-caval compression during pregnancy and labor.* Edema and venous congestion of the lower extremities is the best evidence of venous obstruction higher up. Additional evidence may be found, however, in the occurrence of hemorrhoids, varicose veins and thrombi of the vulva, and congestion of the vagina and cervix uteri.

Aortic compression would seem to be indicated by the observed tension of the arterial system above the obstructed point, as shown by tension of the radial pulse, and which is especially pronounced in uremic cases. But I must now call attention to another mode of diagnosis, which has not been usually practised, viz., *feeling the pulsation of the femoral arteries below Poupart's ligament.* In the twenty-one pregnant women that I have lately examined in this way, the femoral pulses could

be easily felt, and appeared to possess their normal tension, but in none of these women was there any abnormal tension of the radial pulse, nor yet any albuminuria or other indication of renal derangement. In none of them either had the head descended into the pelvic brim, but remained above it poised upon one of the iliac fossæ.

17. *The relation of eclampsia with renal disturbance and with abnormal position of the child, etc., during pregnancy.* As is well known, various explanations have been given of the eclamptic paroxysms during pregnancy and labor; and while the fits are explicable in some cases in one way, and in some in another, I hope to show that the several kinds of cases and their alleged preceding pathological states may all, or nearly all, be traced back to the one chief and original factor of disturbance, viz., *mal-position of the child, i. e., presentation of one end of the fetal ovoid instead of an oblique presentation, as before explained.* Let us consider first:

(a) *Cases with albuminuria, nephritis, and uremia.* In these cases, the convulsions occur much in the same way as they do in males suffering from uremia consequent upon Bright's disease. Whether the spasms be due to the retention of urea, or its decomposition into carbonate of ammonia, etc., may matter little, for disease of the kidney is, in these cases, *known* to be the root of the evil. Hence it brings us back to the origin of the renal trouble, which we have already referred to, pressure of the misplaced fetus and womb upon the aorta, vena cava, etc.

(b) *Cases without, or with but little, albuminuria, or kidney trouble, but in which albuminuria, etc., may be produced, or increased, by the convulsions.* These cases are explicable upon the "uterine irritation" theory of Tyler Smith, who maintained that true puerperal convulsions were produced either by centric irritation of the spinal marrow, or by eccentric (peripheral) irritation of it, produced "by an excited condition of an important class of incident nerves, namely, *those passing from the uterine organs to the spinal centre, such excitement depending on pregnancy, labor, or the puerperal state.*" But how shall we account for this abnormal irritation of the uterine nerves? It cannot be considered a physiological condition; and with our hitherto prevalent notions of what constitutes normal pregnancy, the occurrence of eclampsia from uterine irritation before

labor begins is the more difficult. When, however, we have decided that conditions hitherto called normal, are really abnormal, the matter becomes more easy. I therefore beg to maintain that *premature obliteration of the cervix uteri, premature distention of the cervical canal and lower uterine segment, with thinning of its muscular wall, and tearing of its decidua; and premature descent of the lower end of the fetal ovoid below the pelvic brim*—all due to a want of that lateral obliquity of the fetus during pregnancy, which would have allowed the weight of the uterine contents to find support upon an iliac fossa, instead of upon the lower segment of the womb—are amply sufficient to account for the uterine irritation which Tyler Smith conceived to be the peripheral excitor of convulsions, even when there was but little or no renal disturbance. And that the spasms, in such cases, should occur with more frequency and severity during labor need not surprise us in the least, for we then have the additional irritation of a child's head being forced through a sphinctorial orifice (the os uteri) which is already in a condition of abnormal irritation, from the tissue changes that have taken place in it during pregnancy. More than this, I am strongly inclined to the belief that the rigid, thin, feather-edged, undilatable os uteri which so often leads to tedious labor in primiparous women is the result of these very morbid changes in the os and cervix that have previously taken place in the manner described.

That cases of convulsions, occurring from this reflex uterine irritation *without* albuminuria, should develop albumin in the urine during or *after* the convulsive paroxysms is to be explained by the *violent contractions of the abdominal walls and diaphragm*, which occur as part of the spasm, added to the contractions of labor pains, *forcing the gravid womb, itself also hardened by spasm and labor pains, against the blood-vessels, and thus causing derangement in the renal circulation.*

(c) Cases of convulsions—whether with or without renal trouble—have again been ascribed to centric nervous irritation occurring as a part of that general irritability, or “convulsibility,” which has been considered not uncommon during pregnancy, and which some have thought due to anemia, and others to plethora or congestion of the brain and nerve centres. There would scarcely seem to be much ground for the *anemic* view. The relief usually afforded by venesection contradicts it; and,

moreover, the tension of the radial pulse is directly indicative of a condition of the brain opposite to that of anemia. The theory of cerebral congestion or hyperemia, on the contrary, is supported on all sides. It becomes necessary, however, to define whether this centric cerebral congestion be venous or arterial in character, for while an excess of arterial blood in the brain will produce convulsions, an excess of venous blood will not, but, on the contrary, lead to muscular relaxation and coma. Venous blood is sedative to the brain; arterial blood, stimulant. It is the excessive venosity of the blood, resulting from spasm of the respiratory muscles and consequent suspension of respiration, that *ends* the convulsive paroxysm. As the late Prof. Joseph Carson remarked in his famous review on Puerperal Eclampsia (*Am. Jl. Med. Sci.*, April, 1871, p. 459): "When the brain is finally deluged with black blood, partly from the impediment to the return of venous blood from the organ, and partly from the propulsion of non-aërated blood into it as the heart regains its power, the convulsion subsides and coma is substituted for it. This is *natural narcotism*."

The cerebral congestion, productive of eclampsia, therefore, must be *arterial* congestion. And this is easily accounted for by pressure of the gravid womb upon the aorta, impeding the aortic stream and causing it to back up in the brain; while uterine pressure upon the vena cava retards the upward current of venous blood and causes this latter to accumulate below the point of compression. We may thus reach the conclusion, as I endeavored to point out over twenty years ago, that puerperal convulsions may be "due to an abnormal excitation of certain central parts of the cerebro-spinal nervous system, caused by an increased afflux of *arterial* blood and a deficient supply of *venous* blood circulating through these centres." (*N. Y. Med. Jour.*, October, 1865, pp. 27-31.) This view has been also maintained by several later writers.

(d) Convulsions may be produced when the nervous system has attained the irritability or "convulsibility" previously noted, by local irritations seated in the stomach, bladder, or bowels, or by violent mental emotion, as well as by rude and violent manipulations during delivery by version, forceps, and other operative procedures. Even the normal phenomenon of a labor pain, under the circumstances, may produce a paroxysm.

(e) Cases may occur in which several or all of the foregoing conditions co-exist.

Thus, then, whether the convulsions be referred to uremic intoxication, or to uterine irritation, or to cerebral hyperemia, or to reflex local irritation in other viscera, or to several or all of these coincidently, they may all be accounted for by *pressure of the gravid womb and child, when the normal lateral obliquity of the latter is wanting.*

18. *Puerperal convulsions of the apoplectic type.* I have always considered the separation of this class of cases from the more common epileptic variety as an unnecessary complication of the subject. Should a woman, during an eclamptic seizure of the ordinary epileptic kind, rupture a cerebral blood-vessel, or become the subject of serous effusion or extravasation in the cranium, and in consequence remain comatose, paralyzed, and die without any return of sensibility, the case is forthwith set down as an apoplectic convulsion, and so in truth it is, but at the same time the apoplexy occurs only as a complicating *accident* of epileptic eclampsia. We do not therefore need a *separate etiology* for apoplectic convulsions—they are secondary accidents of the epileptic cases. Our ideas of *etiology* can no more be based upon the lesions found in the brain in apoplectic cases, than they can upon lesions found in the lung, for pulmonary emphysema, edema, and apoplexy also occur as complicating accidents of the epileptic seizures. To base our ideas of etiology upon the fatal lesions that suddenly cause death is like examining the burst tubes and boiler of a locomotive engine after a railroad collision; these teach us nothing of, and would never suggest, the true cause of the accident, viz., a want of that lateral obliquity in the direction of the train which prevented it from switching off on one side so as to avoid collisional impact with its fellow. So, in like manner, the ruptured cerebral or pulmonary blood-vessel occasionally resulting from an eclamptic paroxysm afford no suggestion as to the *cause* of the convulsion.

19. *Causes of disturbance of the normal lateral obliquity of womb and child, and of their premature descent below the pelvic brim, especially in primiparæ.* While the conditions stated, and also their causes, occur most frequently in primiparous women, they also occur with less frequency in multiparæ. The reason most generally alleged for injurious pressure of the

gravid womb being greater in primiparæ than in multiparæ, is *tension of the abdominal walls*—they have not, it is said, been stretched by a previous pregnancy. While it may not be possible to present evidence in refutation of this idea, and while the tension referred to must perhaps be admitted as a contributing factor in producing abnormal pressure, yet it seems to grate against reason when we are pushed to the supposition that a young female in the best of health, and in the prime of womanhood, has been endowed by Nature with every provision for normal reproduction, *except that her abdomen will not grow*. The diminutive, unimpregnated womb expands to its gigantic full-term proportions readily enough, and the other structures of the reproductive system execute the respective changes required of them by pregnancy, and yet by some strange omission in the natural make-up of the female, *capacity for abdominal expansion, commensurate with the growth of the uterus, has not been provided for!* As I have said, this supposition grates against reason. We can scarcely admit the *natural* lack of capacity for abdominal expansion in a *healthy* woman. We must therefore seek for some artificial or abnormal factor or factors, by which natural abdominal expansion has been interfered with or prevented. These will not be difficult to discover, especially in primiparous women. Among them (there may be others) are *dress, corsets, coitus*, and certain *abnormal postures*.

When we consider how very seldom the physician examines, *per vaginam*, young primiparous women in the *erect posture* and with their *usual clothing intact*, there is little positive evidence as to whether or not the mere pressure of waist-bands, with the weight of skirts appended to them, exercise any injurious pressure upon the abdomen and fundus uteri during pregnancy. We usually make such examinations in the recumbent posture and with the clothing for the most part removed. Yet while clinical evidence on either side may be lacking, we cannot escape from what we already know with regard to the *mobility of the uterus*. We observe it to descend from its own weight during the first two months of pregnancy; and then later as, growing larger, its slanting external surfaces (small below, large above) impinge against contiguous structures, the slippery wedge (or cone) glides gradually upwards above the pelvic brim. We note how easily it may be depressed by the gynecologist's bimanual examination. Examined by inspection,

we observe the vaginal portion of the cervix to move up and down, even by so slight a force as that exercised by the action of the diaphragm in respiration—an observation rendered doubly evident during coughing, laughing, sneezing, etc.

All considerations lead us to the conclusion that the opposing factors of ascent and descent are, in a state of nature, somewhat *nicely balanced*; and that when one predominates over the other, in conformity with the natural requirements of different periods of pregnancy, the predominance is *not* in any greatly superfluous or redundant degree. Hence it is not unreasonable to suppose that the pressure of waist-bands and the weight of appended skirts, when the female is erect, may contribute to disturb this balance, and either prevent or retard the womb rising at the proper time, or injuriously compress it when it has risen. This seems to have been understood (practically at least) by the women of Rome, centuries ago, who, as Parvin reminds us (*"Obstetrics,"* p. 211), "laid aside their girdle, the *fascia mammillaris*, when they became pregnant."

But if the pressure of skirts and waist-bands, comparatively light and loose though they be, is in any degree prejudicial, how much greater must be the injury inflicted by the wearing of *corsets*!

We do not yet, I think, thoroughly enough appreciate the influence of wearing them upon the pregnant womb. The woman will often enough stand before us, and lifting up the lower anterior border of the corsets, declare "they are quite loose." And so they seem to be as she, unconsciously perhaps, draws in the abdominal wall. But note what takes place when she sits down. The spine is no longer so erect; the constriction at the waist is crowded down towards the pelvis; the expanding lateral borders of the corset far overlap the iliac crests; while in front the median point of the stays—near the navel while the woman stood erect—now dips to the *mons Veneris* or even completely over it to the inter-femoral space. A distended abdomen will inevitably bulge forward in the sitting posture, for the spine and thighs then more nearly approach each other and so shorten the vertical diameter of the abdominal cavity. Corsets, therefore, which may appear loose enough while the female stands erect, may exert much greater pressure in the sitting posture. And, farther, should the pregnant woman stoop to pick up a pin or other trifle from the floor—a not uncommon occurrence

certainly—the *prèssure* then exerted upon the fundus uteri would be still more increased. And now if these effects follow corsets *loosely* (?) worn, by what measure shall we compute the pressure when they are confessed to be *moderately tight*, “merely to preserve the figure as long as possible”? And finally, when the unfortunate victim of an illegitimate pregnancy laces as tightly as she can, and with reckless disregard of consequences, in order to conceal her condition, the pressure upon the womb must then be far beyond the natural means provided for maintaining the organ in the abdominal cavity. And thus perhaps it is why seduced women are frequently the subjects of puerperal eclampsia, though usually this has been ascribed to mental or emotional causes.

Let us not fail to note also, and particularly, that corsets, whether tightly or loosely worn, exert *symmetrical* pressure, equal on both sides, and hence the womb and child, forced out of their normal and *unsymmetrical* lateral obliquity, have their long axes maintained more nearly parallel with the axis of the plane of the pelvic inlet, and thus, instead of resting obliquely, supported below upon one of the iliac fossæ, in the cavity of the *abdomen*, drop, or are forced prematurely, into the cavity of the *pelvis*. It is almost needless to repeat that it is in the primiparous woman that this pathological condition is most frequently observed: and it is she also, generally speaking, who is most concerned about her figure. After having had one child, she becomes, as a rule, less fastidious in this particular, and submits to the inevitable with less resistance.

In addition to skirts, girdles, and corsets, we may next consider the weight of the hands and arms (or rather forarms), superimposed one over the other above the fundus uteri. As these limbs are thus disposed over the upper region of the abdomen, the additional pressure upon the enlarged womb must be considerable. It is almost unnecessary to say that this gesture or position is an exceedingly common one with pregnant females when in the presence of company by whom they do not desire their situation to be observed. Such women also, even when standing erect, adopt an unnatural attitude, that of bending forward, in order to conceal their condition, which is exactly opposite to their normal posture. Naturally, and in order to preserve the centre of gravity of the body against the tendency to fall forwards occasioned by the weight of the pregnant womb

in front of the spine, the pregnant woman stands with the head, shoulders, and spinal column inclined backwards (as explained by Matthews Duncan), and Montgomery refers to this normal posture ("Signs of Pregnancy," p. 7) as giving to the female "that pompous air which is so often unjustly attributed to a wish to make a display of her condition."

And next with relation to *coition during pregnancy*. The abstract statement that coition during pregnancy is at all times unphysiological, though intrinsically true, need not here be discussed.¹ It will suffice to observe that the dorsal decubitus of the female, with flexion of the thighs towards the abdomen, and with a part of the weight of the superimposed abdomen and body of the male, must tend to force the uterus down towards the pelvic cavity, and contribute to counteract the normal tendency of the organ to rise and remain above the pelvic brim. It may be added that coitus, as a rule, will be repeated more frequently in young newly-married primiparæ than in older, multiparous women.

On the whole, I think we are justified in concluding that the abnormal factors now cited will be sufficient to explain disturbance of the womb and child from their normal lateral obliquity and their premature descent below the pelvic brim, especially in primiparæ, without our being compelled to refer these abnormalities solely to the tension of the abdominal muscles. We ought, however, perhaps to consider that the want of natural expansion in the abdominal walls during pregnancy may be due to *actual deformity* or *tissue changes* in these walls, produced by the compression of tight-lacing, continued possibly for years, before the occurrence of conception.

With relation to dress during pregnancy, we freely indorse the statement of Dr. B. W. Richardson ("Preventive Med.," p. 650) that "the clothing of the expectant mother requires special care, since under the present system *it is the worst that by any mortal ingenuity could be devised*. The clothing should be light, warm, and *borne entirely from the shoulders*; anything like tight bands or corsets round the body are equally injurious to mother and child."

¹ I have already expressed my own views on this subject in a paper read before the Washington Obstetrical and Gynec. Soc., Jan. 2d. 1885; and again, briefly, before the Anthropological Soc. of Wash. (See Trans. Anthropol. Soc., of Wash., vol. 1, pp. 36, 37, March 1st, 1881.)

In fact, the wonder is, that so many pregnant woman escape with only the slighter ailments occasioned by pressure upon the gravid womb. That, in spite of the artificial appendages to her person, and the other abnormal influences just mentioned, woman should but rarely suffer serious or fatal injury must lead us to exclaim that Nature is indeed beneficent, and her resources unexpectedly ample.

Anthropologists tell us that there are, still living in this world, 250,000,000 inhabitants, whose wardrobes consist of something less than the "traditional fig-leaf." It would be extremely interesting, as well as profitable, to ascertain the position of the womb and fetus in the pregnant women of these tribes, and whether the renal and other troubles of their primiparæ occur as frequently as among the clothed women of civilized nations. But we have, I think, no reliable data upon this point at present.

(To be continued.)

A CASE OF PRECOCIOUS DEVELOPMENT.

BY

WM. R. PRYOR, M.D.,
New York.

THE subject of this paper was partially described at the November 2d meeting of the New York Obstetrical Society by Dr. H. Marion Sims.

He is $3\frac{1}{2}$ years of age. When born, he weighed between ten and fifteen pounds, and is the fifth full-term child to which his mother has given birth. The delivery was accomplished by means of forceps, being the only labor of this mother which necessitated their use. While pregnant with him, his mother suffered from hysteria and depression of spirits, but was in good general health. The mother is of Scotch descent, the father American. Both parents are well developed and strong, except that the mother has a badly torn cervix uteri, which is in an advanced state of glandular degeneration. She has had a number of miscarriages in the early months of gestation.

The boy cut his first tooth when eleven months old, had command of a few words at thirteen months, and first walked when a year and a half of age. Dark hair was first noticed on the pubes at eleven months, and at fifteen months he began to masturbate, grasping the erect penis in his hand. When a year old, he was circumcised. The general appearance of the boy



is shown in the cut. He is powerful, his muscles in action standing out like those of an athlete. The hair on the head is thick, coarse, blonde, and stands up. He continually scratches his head around the parietal eminences. The eyes are deep-sunk and restless. Running up the middle of the forehead, from between the eyebrows to the hair, is a ridge over the site of the superior longitudinal sinus. The temples are sunken.

The features are all large, especially the mouth, and are never in repose while the child is awake. The hands are large and strong. The chest is beautifully symmetrical and deep, and the belly prominent. The limbs are shorter than proportionally they should be, but the bones are large, the epiphyses of the legs especially so.

The pubes are well cushioned with fat, and, together with the root of the penis and adjacent scrotum, are covered by thick dark-brown hair. The penis when limber is as large as that of a man, the glans having a particularly adult appearance. In the picture, it may be compared with the hand of the woman holding him, she having very large bones. The dartos is always drawn up and the scrotum wrinkled, but the testes are as large as those of boys of twenty. I have never seen the penis in erection; but the boy's grandmother, a woman of hospital and other varied experiences, says it is fully as large as a man's. The roof of the mouth is well arched, the teeth even and strong, the tongue large and thick, and the secretion of saliva abnormally abundant.

The child continually handles his penis, whether it be limber or erect. But the organ is never perfectly limber, being in a condition of subinvolution all the time. He awakens several times every night to play with his penis. No one has ever seen him have an emission, nor is it apparent that a distinct orgasm is ever produced. When caught in the act of masturbating, he is punished; but if not detected it seems that the nervous excitation gradually passes off. The urethra is large, and the stream of urine free. There are no moustaches, no whiskers, and but a mere suggestion of hair in the axillæ. The hair on the scrotum does not extend to the perineum. The boy is very strong, and easily masters children much older than himself. He is seldom allowed in the street because of his roughness in play.

Many times a day he has what his parents call "spells." He will suddenly burst out into a coarse deep-voiced laugh, the cacchinations following one another so rapidly and being so forcible that every vein in the head and neck seems about to break. This lasts about a minute, and is either preceded or followed by a rolling upwards of the eyeballs, evidently convulsive in character. During this, the features are fixed in a grin. For a few seconds only do the eyes thus move; but I think

that I have at the same time detected a slight backward jerking of the head. Still, this may be a valueless observation, for all the muscles of the neck are then rigid and tense. These attacks come on from no cause which is apparently external to the child, though I can produce them in him by myself laughing inordinately in his presence. They commonly occur either before or after an erection, or when the urinary organs are excited by the presence of urine in the bladder. When laughing violently, he sticks the fingers of one or both hands in his mouth.

The whole child seems to be engrossed with the idea of laughing as violently and loudly as he possibly can. It is not the laugh of merriment; it is more a series of violent, almost convulsive cacklinations. Suddenly the laugh will cease, the boy will say many times "Be a good boy," turn appealingly to some friend near, and burst out crying, bawling at the top of his lungs. It is pathological joy and sorrow, the one following the other many times in the day or occurring independently.

He is quick-tempered and rough in his play. As his grandmother puts it, he never "makes play for himself," a term very aptly expressing the child's lack of original thought. He will repeat, parrot-like, any word or phrase spoken to him. He lacks all the attractive ways of children, and exhibits but little affection for any one. He is excessively nervous and alert, occasionally eyeing out of the corners of his eyes any one about whose intentions he is suspicious. His voice is that of a boy just turned to manhood, but harsh and always emotional. In an awkward way, he will dance and sing, being much pleased by applause.

He has never shown that he knows there is another sex. Though thrown with girls he has never tried to have connection with them. His appetite is voracious. He sucks his fingers and slobbers. There is always a watery discharge from his nose. His movements are awkward, and his running as grotesque as that of other bow-legged children. The whole effort of nature, the entire being, seems to be devoted to the precocious maturing of the psychical principle; and with the emotions are abnormally developed those portions of the body which give expression to them.

The child may be circumcised, he may be castrated, yet will he be the same. The lesion is central, and as these emotions

grow in intensity the other properties of the brain will become more and more distorted and withered, until pretty general mental degradation is the result, and the child becomes a mere dull animal. He now, upon superficial observation, appears bright; but he has little of the perceptive and conceptive abilities of even a young animal. He fears, he becomes angered, he weeps, and in addition he has a perverted sexual appetite. But every expression of an emotion is irrational and exaggerated.

His memory, so far as it can be tested in so young a child, is good. His reason, "that faculty by which we appreciate the character of the nervous impressions received and are enabled to refer them to their external source," is not good, being clouded by the excessive prominence of the psychical element. His judgment is pretty much limited to that form of unconscious cerebration which we call "instinct." It is altogether a strange jumble of those faculties which normally make the attractive, bright, and intelligent child. It may be called a case of psychophysical precocity, for in intellectual scope this child is vastly inferior to his brother, who is two years older, though the head measurements of the two boys are nearly the same.

The other children of these parents have never presented any peculiarities; and the parents themselves are bright people, not over-emotional.

I do not believe much in the influence of the moral and mental qualities of a woman upon the child in utero; but it is possible that the large doses of ergot which this mother took in order to cause the uterus to expel this child prematurely may have determined such alterations in the nutriment of the developing cerebrum as to produce the result we now see. The child is always on the go, restless, or giving expression to some emotion.

This boy, though he feels what I may term a sexual irritation, has yet never shown that he appreciates the difference between himself and girls. Neither does he appear to masturbate with any definite object of producing an orgasm. It is more the titillating of a sensitive organ. And his voice—this is masculine and adult, being deeper than that of many men.

In common with the rest of the phenomena of pubescence, it is but an exponent of an embryonic tendency to abnormal growth of those parts of the encephalon which govern the sexual principle of the male animal. Of course, it is abnor-

mally shown, and is not a mere rapid development of a natural function of the body. In other words, I believe the cause of all the physical manifestations to be within the brain; and that the exaggerated emotions also emanate from brain tissue, which is distorted and influenced by the one overwhelming effort of nature in one direction. His playing with his penis may act as an additional cause of his excitement. But even without erectile tissue in the penis, and if castrated, he would yet have the same periods of perverted sexual excitation. By no means is he idiotic, though I believe he will so become. He is now in an exalted condition of limited brain action.

It will be interesting to see whether the formation of spermatozoa will ever take place, or whether nature has not rendered him sterile.

In the following tables I give the measurements of this boy's head and body, and also those of his brother, who is two years and one month older:

	Age yrs.	Height inches.	Weight lbs.	Chest Circumference inches.	Biceps inches.
Patient	3 $\frac{1}{2}$	43 $\frac{1}{4}$	53 $\frac{1}{2}$	25	8
Patient's brother....	5 $\frac{1}{2}$	41 $\frac{1}{4}$	41	22	...

	Circumference of Head.	Over Skull from Ear to Ear	Across Forehead from Ear to Ear.
Patient.....	20 inches	13 $\frac{1}{4}$ inches	10 inches
Brother	19 $\frac{3}{4}$ "	13 $\frac{1}{2}$ "	10 "

Around Occiput from Ear to Ear.	Occipital Protuberance to base of Nose.
10 inches	13 $\frac{1}{4}$ inches
9 $\frac{3}{4}$ "	14 $\frac{1}{2}$ "

In making the various measurements, I took the points of attachment of the ears to the skull as fixed points.

The last table shows how much more brain capacity the elder boy has over his brother, in that the vertex is much more arched and the head altogether more roundly symmetrical.

With this sketch and the accompanying plate, I trust the reader will have a good idea of what I consider a most interesting case.

Query: Is this boy responsible, legally, for any misdeeds he

may commit? Furthermore, what can be done to retard or arrest the progress of his malady? I have limited, by careful watching, his masturbating in the daytime, and prevent it at night by fastening his privates in a sort of cage. He has had but little medication, and that limited to the use of valerian, the bromides, and lupulin. He is better while using them, and immediately relapses when they are discontinued.

BREUS' MODIFICATION OF THE OBSTETRIC FORCEPS.

BY

HENRY D. FRY, M.D.,

Washington, D. C.

SINCE the appearance of Tarnier's axis-traction forceps, a fresh impulse has been given to the subject of forceps construction, and various modifications of this instrument have appeared. The chief objections raised against Tarnier's forceps are its complicated mechanism and its high price. That less force is required, other things being equal, to extract the head with this instrument is generally conceded by those who have familiarized themselves with its use.

I desire, in this brief communication, to call attention to an instrument which was brought to me by a friend who visited Germany last spring, and which appears to possess all the merits of a Tarnier's forceps, while it is simple in construction, easy of application, and can be put on the market much cheaper than the latter forceps.

This instrument, which is the forceps of Breus, is modelled after the popular Simpson's forceps, but differs from it as follows: Five inches distant from the lock, and three inches from the beginning of the cephalic curve, is situated a hinge-joint which permits the upper five inches of each blade to move in an antero-posterior direction. The portion of the blade above this joint, *i. e.*, the movable portion, includes the greater part of the cephalic and all of the pelvic curve. Most of the measurements are greater than in Simpson's instrument.

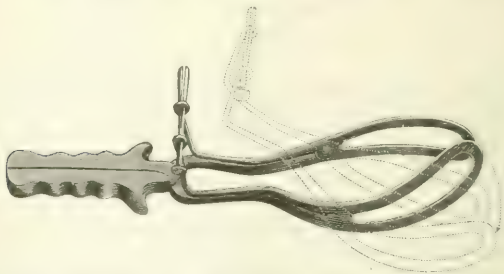
Commencing at the hinge-joint, two thin, spur-like processes

are continued downwards from the upper movable blades upon and parallel with the instrument, almost to the lock; here they curve upwards at a slightly obtuse angle and end, two and a half inches from the shanks, by ring extremities. A connecting pin passes through these rings.

A complete description of this instrument and of the various modifications of the axis-traction forceps is given by Breus.¹

Breus says he had abundant opportunities for comparing the relative values of the instrument of Tarnier and the ordinary obstetric forceps, and the result was greatly in favor of the former. He found that much less force was required to deliver the head with the axis-traction forceps.

He does not accept, however, the explanation of Tarnier that the handles indicate the direction in which traction must be



made, and consequently less force is exerted upon the traction rods because less is wasted by pulling in a faulty direction. The movements of the handles, he claims, does not retain uniform relations with the axis of the pelvis, and therefore they are unreliable as indicators of the direction for traction. They merely furnish an approximate idea of the direction.

The real cause why less force is demanded must be looked for in a different direction, and this, according to Breus, is because of the greater mobility allowed the head during traction with the rods than is the case when the handles of the ordinary forceps are employed.

If, when using the latter instrument, we make traction in a

¹ "Die Beckeneingangszangen," von Docent Dr. Carl Breus. Wien, 1885.

wrong direction, forwards for instance, compression is exerted upon the tissues against which the head is dragged; if, on the contrary, the axis-traction forceps is used, the head passes where resistance is less, and the blades of this instrument do not prevent such movement. The greater freedom of motion thus given to the head is the reason why less force is demanded.

Guided by this opinion, Breus constructed the instrument represented in the accompanying cut. The hinge-joint allows a sagittal movement of the blades, and consequently traction can be employed by means of the handles without destroying the mobility of the head while within the grasp of the forceps. "Solidity of construction, simplicity of application, and reliability during traction are not found in an equal degree in Tarnier's forceps." In Tarnier's forceps, the modification forms the principal part of the instrument, while in his the general appearance of the ordinary forceps is retained, and the modification is merely a supplemental change.

This forceps is applied in the usual manner. During introduction, the spur-like prolongation of the upper portion of the blade is pressed against the shank by the forefinger, and the joint made immovable. The instrument is locked, and the connecting pin passed through the rings at the ends of the spurs. When the pin is in position, isolated movement of either blade is prevented. It keeps the movable blades parallel in sufficient degree to maintain the head in the grasp of the instrument.

The result of the employment of this instrument has fully sustained the views expressed by Breus.

THE GALVANIC TREATMENT OF UTERINE FIBROIDS: FULL TEXT OF FIRST FIFTY CASES.

BY
EPHRAIM CUTTER, M.D.,
New York.

(Continued from p. 130.)

SERIES III. ARRESTS, TWENTY-FIVE CASES.

CASE XII.—*Fibro-myoma, pelvic, large size; imperfect application from the twisting and bending of the needles; two operations, both without anesthesia; profound impression; collapse*

imminent; tumor arrested; general health improved; return of appetite and strength. Kimball.

Patient, in October, 1876, living in Newton, Mass.; much benefited.

Dr. Kimball's report:

"Having procured from Dr. R. P. Lincoln, of New York, a set of electrolysis needles, prepared under his direction, I selected two of the longest, six inches in length, and about one-sixteenth of an inch in diameter, cylindrical, tipped with platinum, and tapered to a point like a common sewing-needle. The battery was furnished by Dr. Cutter, and with special reference to the purpose in view. Thus provided with what seemed to be in all respects a complete apparatus, I proceeded to make trial of it in the case of Miss F., of Springfield, Mass., aged about 40. It is proper first to state that I had previously been sent for to see this case, in the expectation that I could find an ovarian tumor. I found instead, however, a large fibroid tumor of the uterus of several years' growth, very hard and irregular, filling the pelvic cavity and rising into the abdomen to an extent indicating a seven months' pregnancy. Every symptom, local and general, declared beyond all doubt the true nature of the disease. There had been frequent hemorrhages, and consequently marked anemia and great prostration. The tumor had been rapidly increasing, and the suffering from distention had now become almost unbearable.

"Being informed of the true nature of her disease, and that it was not of a character that, in my judgment, properly admitted of any such operation as she had anticipated, the patient was quite ready and even anxious to submit to any other form of treatment I might suggest. The plan of electrolysis was then fully explained, and in pursuance of arrangements then made, she soon after came to Lowell and submitted to the *first trial* of the battery, the 26th of December, 1871. No anesthetic was used. The electrodes were plunged into the most prominent part of the tumor, passing through the abdominal walls on either side of the median line, about six inches apart, and in a downward and inward direction. They entered the tumor with great difficulty, and became so twisted and bent in the effort that the fibrous structure was penetrated not more than three-fourths of an inch.

"In this respect, the operation was not at all satisfactory, inasmuch as it was intended that the electrodes should penetrate the tumor to at least the depth of three or four inches. Connections were made between the battery and electrodes, and the unbroken galvanic current maintained continuously for seven minutes. During this time the pulse changed materially as regards frequency. At first it was not disturbed; very soon it rose to 120, and was not so full as natural. The face became pale and somewhat pinched. A cold sweat covered the forehead, and hands and feet, forearms and legs were cold and pale. The pa-

tient all the while uttered expressions of much suffering. Finding the impression so very profound, we desisted from farther continuance of it, lest serious harm might ensue. The connections were broken and the electrodes withdrawn. The operation was followed by considerable prostration and a pretty sharp pain through the abdomen. The prostration was met by stimulants, and the pain by subcutaneous injections of morphine and hot fomentations to the abdomen. The patient gradually rallied, and the pain subsided in the course of twenty-four hours. A sense of soreness through the region of the tumor continued for several days.

“January 1st, 1872, *second operation*.—The operation was repeated in the same manner and with very similar results as to prostration and local suffering. For the six weeks following the second and last operation, the patient remained under my daily observation. No special change was noticed as regards the tumor; certainly no increase in size appeared—a fact of great significance, considering that, for weeks previous to submitting to the first application of galvanism, the growth was rapidly advancing and causing great suffering from distention. Defective and unsatisfactory as were the experiments in this case, owing to the imperfect construction of the electrodes, the effect upon the general condition of the patient proved, on the whole, very gratifying. Within three weeks from the first trial of the battery, there began to be a manifest improvement in health. Besides the return of appetite and strength, there was a consciousness of an arrest of the growth of the tumor. The moral effect of the last-named fact was to remove a depressed state of mind that had hitherto been one of the most important features of the case.

Being satisfied that electrolysis had not been fairly tested in the foregoing case, I determined that, before making further trial of it, I would provide myself with better and differently constructed electrodes. With this view, I applied again to my friend Dr. Cutter, whose tact and ingenuity I was sure was quite equal to furnishing all that could be desired. The first electrode he produced was made after the fashion of a corkscrew. This looked promising enough, but proved upon trial to be perfectly worthless. The doctor then produced another instrument, made almost precisely in the form of a surgeon's director, grooved, with sharp point and edges, and an ebony handle at the proximal end. Provided with this newly devised instrument, I expected to be able to penetrate the fibroid tissue to any depth desired, however dense and unyielding it might be. The angle made by the two laminæ of the blade was made dull so as to bring the tissue strongly in contact with the sharp free edges of the laminæ, and thus cause their easy severance; moreover, from the instrument possessing so much larger surface on its four planes, it was expected to get a greatly increased galvanic action. In both these respects I have not been disappointed. I can justly recommend the instrument as decidedly superior to any other I have yet seen.”

Remarks.—This case has a great interest, as showing the natural history, so to speak, of the operation without anesthesia. The great sufferings manifested by the hippocratic countenance and the signs of profound collapse point to the exhibition of a very profound influence. The fortitude of this patient demonstrated that it is cruel to perform this operation when the subjects are not under anesthetics; the shock is too great.

CASE XIII.—*Pelvic and abdominal fibro-myoma; dyspnea; ascites; anasarca; no anesthesia; effect of galvanism, disappearance of dropsical symptoms; relief from dyspnea; tumor sensibly diminished at least; three operations; return of bad symptoms on ceasing applications; death therefrom.* Case published January 29th, 1874, in *Boston Med. and Surg. Jour.*, page 110. *Operator and Reporter, Kimball.*

“March, 1873, Mrs. T—, widow, Hubbardston, Mass., 40 years of age, married nine years since, but without children, called upon me to get my opinion and advice in regard to a large tumor in the abdomen. On examination, I found the disease to be a uterine fibroid, very dense, irregular, almost completely filling the pelvis, and extending upward into the abdomen as far as the umbilicus. The neck of the uterus was also involved, and the disease in this direction had projected itself several inches into the vagina. The general health of the patient had become much impaired, and she was suffering greatly in many ways, but especially from constant dyspnea and inability to get any rest, except in a semi-recumbent position or sitting upright in a chair. There was more or less peritoneal effusion, also anasarca. Although the case was unpromising, after explaining the difficulties and the slight prospect of getting any relief from any form of medical or surgical treatment, I suggested that *possibly* some benefit might be gained from galvanism. The proposition was cheerfully accepted, and no time was lost in carrying it into effect.”

First operation.—“The first experiment with the battery was made the 26th of March under the direction of Dr. Cutter. His newly-constructed electrodes were then used for the first time. The plan of procedure was precisely the same as that described in the first case, except that in the present instance the electrodes were made to penetrate the tumor to the depth of four inches, instead of less than a single inch, as before. The current was continued five minutes. During this time, the local suffering was quite severe and lasted several hours after the electrodes had been withdrawn. The pulse, meantime, fell from 100 to 60 per minute, and the skin became cool; but there was no severe prostration, as in the former case. Considerable reaction followed, but it subsided entirely in the course of twenty-four hours. The immediate effects of this operation were quite remarkable. During

the first twelve hours, the urinary secretion was more than quadrupled in quantity. At first turbid, it became clear and light-colored. In connection with this change, the dropsical condition began immediately to subside, and in less than a week it had disappeared altogether. But the most striking effect of the operation was the almost instantaneous and perfect relief from dyspnea. For the first time in many months, she was permitted to lie down in bed and enjoy rest and sleep equal to that of the healthiest period of her life."

Second operation.—"As soon as the pain and soreness had fully subsided, the patient was subjected to a second trial of the battery. This time the tumor was attacked in a different manner. One electrode was thrust into the disease through the abdominal walls about four inches; the other electrode was made to penetrate the tumor per vaginam. In this direction, it entered about three inches. The connections were then made, and the current continued about four minutes. No specially marked effect followed this operation, save some pain in the direction of the tumor, somewhat severe at first, but subsiding in the course of a few hours."

Third operation.—"The third and last operation was done about two weeks after the second, but with no special difference as to results. This patient was under my charge six weeks, and her general condition was improved greatly. The more special evidence of this fact was seen in the complete and continued relief from a most distressing dyspnea, and at the same time in the ability to lie down and sleep comfortably in her bed. Her appetite and strength returned in a great degree; the peritoneal effusion and anasarca passed away, and the suffering from abdominal distention became scarcely noticeable. The tumor itself became sensibly diminished in size, at least two and a half inches, as determined by careful measurement with a tape passed around the body over the most prominent portion of the tumor. Upon my departure for Europe, the 1st of May, the galvanic treatment was discontinued, and the patient returned to her home. Soon after, as I have since been informed, her improved condition, so recently giving promise of a permanent relief, began gradually to give way to a return of all the previous bad symptoms. In defiance of medical treatment, her condition soon grew rapidly worse, till, finally, she was relieved by death, about the middle of July, some ten weeks from the time I last saw her."

Remarks.—In calculating the merits of electricity as a remedial or curative agent, I am not disposed to make more of this case than it really deserves. I can only regret that the treatment which during the period of six weeks had produced such marked and satisfactory results could not have been longer continued. There were complications in the case, and it is not quite

certain whether they were incidental to or independent of the uterine disease. However this may be, it was certainly an important and interesting fact that they were completely relieved for a time through the influence of galvanic action. As regards what might have been the result of a longer continued application of this same agency, it is, of course, a matter of mere conjecture. But allowing the case to have been absolutely beyond the reach of cure by any known remedy, the power of galvanism in affording such relief from suffering, as shown in this particular instance, furnishes sufficient reason for regarding it as something better than a therapeutic agent of a merely fancied value.

CASE XIV.—Large fibro-myoma; multilobar; abdominal; ascites; disabled from much employment.

Result:—Tumor diminished; dropsy dissipated; improvement in general health; able to keep a boarding-house; subsequent invalidism from peritonitis resulting from careless exposure; dysentery, death and autopsy eleven months after last operation.—Operator, Cutter.

Mrs. P., a patient of Dr. W. G. Wheeler, of Chelsea, colored, aged 41 years, childless marriage, on March 2d, 1875, presented an enormous multilobar, very dense fibro-myoma. It was of ten years' standing, chiefly abdominal, and somewhat tender. She had ascitic effusion and great distention. The measurement about the largest part of the abdomen was forty-four inches. She suffered at times from attacks of what her physician regarded as peritonitis. These attacks were quite severe, confining her to bed about three days at a time. At other times, the tenderness and weight were productive of much suffering. This day (*ut supra*) in the presence of Drs. Wheeler, Weeks, Shackford, and myself, she was etherized and submitted to the application of the battery.

First operation.—Both electrodes were passed through the abdominal walls and the current was continued for five minutes; pulse normal throughout. No collapse or bad symptoms followed. Considerable serous fluid exuded from the punctures. She was kept in bed a short time only. Soon the ascites disappeared, lessening her bulk and distress from distention. It did not reappear until just before her death. She took matters very calmly and heroically, making but little trouble throughout. She had been, it should be stated, unable to perform her household duties to any advantage.

Second operation.—March 27th the second application of the battery was made. She was in good spirits, feeling well, and able to work. Ascites gone. The current was continued ten minutes under ether. Drs. Wheeler and Weeks present. Both

electrodes were passed through the abdominal walls. More constitutional disturbance followed this application. There was a marked increased action of the kidneys manifested by the unusual and profuse flow of urine that lasted for some time. She kept improving in health, although the tumor apparently was only arrested. She went through the summer well and through the winter demonstrated the decided improvement in her health by keeping a house full of boarders and doing all the work herself. When approached with reference to a third operation, she said: "I feel well enough and do not see why I should go to bed for two or three days simply to please Dr. Wheeler and Dr. Cutter; and besides I am too busy."

Third operation.—However, on March 4th, 1876, she submitted to the operation again. Six physicians were present. One of them was Dr. Webber, an electrician by specialty. Some of the gentlemen had seen her before and expressed the opinion that the tumor had diminished somewhat in size since the last operation. The electrodes were passed in through the largest lobe on the right side of the abdomen, and the current continued for five minutes. The electrodes were then withdrawn and reintroduced into another lobe on the *right* side and into a lobe on the *left* side of the abdomen. The current was passed through for five minutes. The specialist tested the power of the battery with a large galvanometer and, as expected, found the *quantity* of electricity large and the *intensity* small. Unless the electrodes touched the connecting wires, the galvanometer did not respond. When it did, the large needle, about eight inches in length, went up to 90° and struck the pin placed there. It was a question with him whether the current did really pass through the tumor. Mrs. P. was profoundly impressed with the double application in this operation, but in a few days she was about as well as ever, and as she felt so comfortably well, it was thought best to give her another resting spell. This is the first instance of *four* punctures made at one operation. The result showed a marked increase in the systemic effects. It is a procedure that should not be practised in any case unless one is sure he is dealing with a good subject, that is, one who has borne the shock well and shown that she is capable of a profound impression without too much constitutional disturbance. It will not answer to be reckless or careless in dealing with such sensitive and vital organs or their diseased conditions as are found within the peritoneal cavity. During the summer of 1876, our patient had an attack of peritonitis similar to those she had had before the interference by electricity. Dr. Wheeler, her physician, stated that the inflammation was situated away from the sites of puncture. He did not regard the electrodes as having caused it. The attack passed away with no bad results, and Mrs. P. continued in the enjoyment of good health up to October 29th, 1876, with the growth of the tumor arrested.

Fourth operation.—On this day, she submitted to the *fourth*

application of electricity, which under the circumstances may be called *the historical operation*, as previous to this time no very great notice had been taken of this new procedure.

In June, 1875, two eminent surgeons and gynecologists of New York City expressed a desire to witness the application of electricity to a uterine fibroid by this method. They stated that they would come on especially to see not less than *three* cases collected together at one point. They were summoned by telegraph and they attended to-day. With them came Dr. F. Semeleder, an eminent physician, formerly a professor in Vienna. The names of these gentlemen, Prof. T. G. Thomas and Dr. James B. Hunter, are so well known that they are full guarantees of leadership in their specialties.

Drs. G. H. Bixby, G. W. Gay, Warner, and J. G. Blake, of Boston; Wheeler, Shackford, Fenwick, Weeks, Haskel, and Walker, of Chelsea; Sullivan, of Malden; and Marcy, of Cambridge, met these gentlemen at this operation. They were sufficient to bear witness and to give the occasion the importance it should have in the history of the operation. An attempt was made to have this operation represent the main features of the operations that had preceded it.

1st. The battery, electrodes, and conductors were the same. The exciting fluid was shown and its preparation described. The plates were immersed in the fluid placed in the cell, connections were made, and the electrodes were struck together giving off large sparks with brilliant coruscations and scintillations, proving that the battery was in order and ready for use.

2d. The patient was placed in bed with all her clothing removed except her chemise and night dress. She was then examined by all interested, and all satisfied, by actual examination, of the correctness of the diagnosis, viz., of the character being subperitoneal, dense, and multilobar. The pulse was noted to be normal, the skin to be cool, and the patient otherwise in good health and condition for the operation.

3d. The patient was etherized.

4th. The abdomen was exposed. The electrodes were lubricated by dipping into olive oil. One was then thrust into the lower part of the larger obovoid flattened lobe on the left side of the umbilicus, from below upwards, to the depth of four inches. The lobe was steadied by the hands of Prof. Thomas and attention was particularly called to the resistance which was offered to the penetration and the facility with which the peculiar form of the electrodes overcame the opposing forces. The ease with which the direction of the electrode was controlled and also the certainty of the penetration was shown. There was no twisting, jumping, or sidelong movements that occurred when it was once attempted to introduce the large ordinary platinum-tipped electrolysis needle into a similar fibroid some years ago.

The other electrode was taken in the hand and its method of holding shown—the handle resting in the palm held against

the ball of the thumb by the little, ring, and middle fingers of the right hand, the free edges of the laminae being placed upwards, the index finger pressing against the outer side of the blade of the electrode at about its middle, the point of the thumb also pressing against the upper surface of the flattened proximal end of the blade—this disposition of the parts of the hand giving a perfect control of the instrument. The tumor was steadied by the operator's left hand, and the second electrode was slowly and continuously driven from above downwards into the lobe, approaching but not touching the other electrode. The depth of penetration was four inches, so that the insulated portion of the electrode came within the skin.

5th. One gentleman watched the pulse; another took charge of a watch. The conductors—in this case made of strands of fine silver wire as chemically pure as it could be made—were attached to the electrodes simply by running their ends through the fenestræ at the end of the electrodes and bending them about it. As the second conductor was attached, attention was called to the convulsive starts and contractions of the abdominal muscles as evidence demonstrating the passage of a current. While the current was passing, some remarks were made as to the *modus operandi* of the electricity. The attempt was made to explain what was done by showing *how* it was done. It was said: "Gentlemen, here you see the battery, the conductors, the electrodes, the patient, the method of introduction of the electrodes, their connection with the battery; and the results that have followed you shall know at some future time. You are to judge whether these results have been effected by these causes. We know that galvanism is a powerful agent, and we know its nature only by what it does. You will please examine the electrodes and you perceive no evidence of a thermic effect" (this was done satisfactorily) "There is no shock, for you saw me touch the electrodes to my own and your persons without the evidence of any sensible impression. The sparks struck forth from the lightly and quickly touched surfaces of the electrodes, and the convulsive movements of the abdominal muscles prove the existence of a current. We think, too, that there is something more done than by mere punctures alone, and that they would not be tolerated as they are unless accompanied by galvanism. We have no objection to, and desire that any one who thinks that our results have been attained by puncture alone, should at once perform a series of operations like these, but without galvanism. It would be a great thing to get rid of the cumbersome battery and the nasty, dangerous, exciting fluid. But with our experience and successful results, we do not dare or feel called upon to turn aside from the path our explorations have made at the bidding of any one who has not had the practical, experimental experience we have been permitted to acquire. And then as to battery, we do not say that the one used is the best or the most suitable. If we felt convinced that

another one would accomplish the same results, we would not hesitate to use it. The present one was devised and employed because at the time it appeared to us to be the best, and the lapse of nearly five years" (now fifteen years) "having shown that it performs so much better than our most sanguine hopes and highest expectations, we do not feel, to use a common expression, like 'speaking ill of the bridge that carried us over.' And before we give up the present battery we must be convinced, by a series of practical trials made upon similar cases by those who feel convinced their battery is so much better than ours. Surely it is asking too much of us to require that we must institute a new series of experiments in which human life is so much at stake, because some person who has never performed the operation and, of course, has had no such practical experience as we have been permitted to acquire, comes forward and demands it. The thing is simply a matter of history. It is a relation of what has been done, not a question of what might be done. We say as a fact that uterine fibroids have been dissipated, diminished, arrested, and some not at all affected by pursuing the procedure which we have endeavored here to-day to give you a practical example of. We have concealed nothing. We have nothing to conceal. We offer this as our contribution to the treatment of subserous uterine fibroids which hitherto have defied treatment." During these remarks, the condition of the patient was watched, and as long as there were no symptoms of systemic disturbance the current was continued until ten (10) minutes had elapsed. The electrodes were then withdrawn. Attention was called to the need of placing two fingers close to the point of entrance, and holding the tissues in contact with the tumor as the instrument is withdrawn.

Reference was also made to the ease with which the *zinc* electrode was withdrawn and the sticky adhesive contact of the *carbon* electrode as evincing the passage of a current. If there was no chemical action, there would have been no difference between them. Attention also was called to the blackened and granular condition of the electrodes, as demonstrating the passage of a current. Steel instruments, when placed in contact with living tissues, do not become changed in appearance like this unless associated with a galvanic current.

As the patient was apparently not much affected by the application, the operation was immediately repeated, by plunging one electrode into the large lobe lying to the left of the navel, in a direction towards the centre of the body to a depth of four inches. The other electrode was passed into a smaller lobe on the right side of the abdomen to the same depth. The current was continued for six minutes, until the patient began to look pale, become restless and move about. The pulse was accelerated. The gentlemen were invited to notice these symptoms as indications of the extent to which the applications should be carried. Prof. Thomas, at the request of the operator, withdrew the electrodes, and by his own subjective sensations observed the different de-

degrees of resistance with which they were removed. They were then touched together and large sparks were struck forth, as indicating the amount of current existing at the close of the operation. The patient was allowed to come out of the ether, warm applications were applied to the abdomen, and the operation was declared completed. The gentlemen expressed themselves as satisfied with the clearness and fulness of the demonstration.

October 31st. Mrs. P. was found feeling prostrated, looking pale, bowels tender and sore, pulse good, still she was up and dressed, sitting in a rocking chair by an open window. The window was closed and she was cautioned by telling her that everything bad that should now befall her would be charged to the operation, and she must not bring any discredit by carelessness. She, November 4th, was seen just in the act of sitting down to a fish dinner she had herself cooked. Appetite good. December 12th. Mrs. P. recovered well from the operation, and also did well until she moved her residence to another quarter of the city. She took cold in the moving and injured herself by lifting. She had some fever, pain and tenderness of the belly, constipation, loss of sleep and appetite. Her physician prescribed a castor oil purge, and morphia solution afterwards. The larger lobe on the left of umbilicus felt boggy and soft, as if it was undergoing an interstitial change to a cystic condition. No wave could be felt.

December 29th. Suffering considerably with vomiting and diarrhea, fever, some delirium, belly tender and sore; less boggy; confined to bed; pulse good. It seems now that the patient went to a funeral and stood on the frozen ground during the burial services and *took her cold there*.

1877, Jan. 4th. Reported better, but unable to be about the house.

January 17th. Much troubled with pain shooting down the thigh of the right side. Confined to bed.

February 8th. Better.

March 28th. Very much better. Measured $41\frac{1}{2}$ inches largest circumference. Her clothes have become at least six inches looser than they were. She is ready to take boarders.

September 18th. Received intelligence from Dr. Wheeler that Mrs. P. died on the 16th. That she had an attack of dysentery four weeks ago. This was checked so that she was quite comfortable. An attack of peritonitis followed, and she died from exhaustion.

Autopsy. Body much emaciated. Abdomen very prominent. The peritoneum was found very adherent throughout. Oij. of ascitic fluid was sponged out. The fibroids were agglomerated into one irregular mass of a grayish-white color, mottled, in some parts of the color of beef steak dotted with points of white. The whole appeared like a lump of tallow. The lobes were joined together as if set in cement. The density and toughness of the adhesion showed a long continuance of the inflammation. On dissecting off the abdominal walls and intestines from the fibroids,

they were found to spring from the uterus, which was lost in the general mass. It appeared as a cylinder one inch in diameter; depth of cavity five inches. To the right of the uterus was a large lobe that pointed downwards into the cavity of the pelvis; in its centre was a cavity as large as a walnut filled with pus. An attempt was made to connect this cavity with the electrodes as a cause; but from its great depth this was decided to be impossible. Above this lobe, on the right, was an irregular lobe two and one-half inches in diameter, semi-solid, not entirely purulent, penetrated by an irregular opening large enough to admit the forefinger. This might have been due to the electrode. The largest lobe was cut open in its long diameter. It displayed a uniform surface, white and cartilaginous. There was no mark of the tracks of the electrodes that had repeatedly penetrated the growth. The evidences of general peritonitis were very much marked. Coagulated lymph, partly organized, plastered over the tumors and the intestines. Portions of the large intestines were almost black and gangrenous.

Kidneys, liver, and spleen healthy.

When the fibroid mass was separated it weighed twelve and three-quarter pounds.

There was one fibroid as large as a hen's egg attached to the abdominal walls at the right hypogastrium. It was white and lardaceous, entirely free from and unconnected with the other lobes. The fluid, with difficulty scraped from the cut surfaces of the lobes, showed under the microscope curling connective fibres, red blood-globules, large parent cells, other cells of varying sizes, innumerable granules, most of them swarming with independent molecular motions.

From the density, the varying histological elements, and the macroscopy, the writer is inclined to regard the degeneration as probably cancerous.

The mobility of the fibroid lobes upon one another remained until some time after the last operation. The history is not that of direct death from the punctures.

Remarks.—This patient, like some others, was careless. It is unfortunate for those desiring to study the natural history of this operation to have it interfered with by influences of ill independent of the procedure. Sitting by an open window, moving, and attending a burial at the grave in cold, inclement weather, are more than most healthy women can bear without sickness, much less this profoundly galvanized one.

CASE XV.—*Large fibro-myoma, sub-peritoneal. At first relief from painful micturition followed the galvanism, with a partial diminution of the growth. Hemorrhages not checked. Death therefrom about eighteen months after the first operation. Operator, Kimball.*

"Miss C., of Newburyport, a domestic, twenty-four years of age, never married, a naturally stout, healthy person; first noticed that she was growing unusually large about four years since, '69. She came to consult me about the middle of September, 1873. Her case was readily diagnosticated as a fibroid uterine tumor, occupying a great portion of the pelvic cavity and extending into the abdomen about three inches above the umbilicus. Her general health was not much disturbed. She was able to go through her daily duties as a domestic without much difficulty. Her chief trouble was a constant pressure against the bladder, causing frequent and painful micturition.

In view of what I had so recently seen accomplished by electrolysis, I proposed a trial of it in this case."

First operation.—"In the course of a few days she came to Lowell for treatment, and, with the assistance of Dr. Cutter, galvanism was applied for the first time September 22d, Drs. Graves and Fuller being also present.

"The electrodes were thrust into the tumor at two points six inches apart, to the depth of four inches on either side, as in previous cases, and the galvanic current maintained *five* minutes. At the commencement of the operation the pulse was 85; at the close it had fallen to 54, the patient meantime being under the influence of chloroform. Returning to consciousness, she complained of severe pain through the abdomen; it continued more or less severe for several hours, but left her almost entirely in the course of the following day. For nearly a week, pressure upon the tumor gave pain."

Three other operations.—"The operation was repeated in the same manner three times in three weeks. She then returned home, remarking, as she was adjusting her dress, that she 'was sure her tumor was smaller because her clothes seemed much looser about her.' Upon a return of her menstrual period, which was within a week after leaving my charge, she noticed the discharge was unusually abundant. It continued so long and so profuse that her physician, Dr. Howe, was called in. Under his treatment the hemorrhage gradually abated, and in the course of three weeks ceased altogether. A few days later she returned to Lowell for further trial of electrolysis. During her absence there was but a slight change in the size of the tumor, especially the upper or abdominal portion of it; that it had diminished somewhat in the pelvic direction seemed evident from the fact that ever since the completion of the first series of operations she had been perfectly relieved as to the pressure on the bladder and the almost constant desire for micturition which previously had been so annoying."

Fifth operation.—"The fifth application of galvanism was made the 20th of November. A day or two afterward she menstruated naturally, and on the 27th, a week from the previous operation,"

Sixth operation.—"Galvanism was repeated."

"She returned home, and no more essays were attempted, and, a year after, death occurred from hemorrhages which were uncontrollable. The tumor did not increase in size."

CASE XVI.—*Large fibromyoid, patient bedridden for nine weeks. Tumor diminished one-third from one application and she was able to be up and about the house. In a week's time, rode out in a carriage comfortably and went about the town as well as ever she did. Two years afterwards the tumor returned to its former size, but the patient continued in good health. Operator, Kimball.*

Mrs. D., of Marlboro, Mass., Oct. 15th, 1873, states that she is 38 years of age and has two children, that at the birth of last child she discovered a lump in the lower part of the abdomen. That ever since that time she has been troubled with more or less occasional hemorrhage from the vagina, and especially at her menstrual periods. At these times she suffered not only from this hemorrhage, but also from continual pain and for the last nine weeks has been almost confined to bed.

On examination, it was evident that she had a fibroid interstitial enlargement of the uterus. This was manifested both through the abdominal walls and through the vagina. The case was judged a proper one for the use of galvanism, and with the concurrent advice of Dr. Charles Putnam, the attending physician, the remedy was applied Nov. 1st, 1873.

First operation.—Chloroform was used as an anesthetic, the electrodes were passed through the abdominal parietes on either side at a point midway between the umbilicus and the anterior superior spinous process of the ilium. They penetrated the fibroid about three inches each. Current continued for five minutes. Recovering from the chloroform she felt no suffering, nor was there any evidence that the system generally had been disturbed.

Second operation.—On the 17th of December following, a second application of the battery was made. Meantime the patient had experienced a great change for the better. *Tumor diminished one-third and decidedly softer.* No excessive uterine hemorrhage. Instead of being confined to the bed almost all day, as before, she is now able to be about the house. In a week's time she rode out in a carriage comfortably and went about the town as well as ever she did.

Third operation.—February, 1874, galvanism for the third time was used. General health good. Tumor still diminishing. An unusual effect of the battery was noticed at this operation, namely, a sudden gush of blood from the uterus. It lasted only for a few minutes, when it ceased altogether. Two years afterwards the tumor returned to its former size, but the patient was in a good state of health and remained so at last accounts.

1886, Dec. 15th. Report from this case is, the tumor has

not increased since treatment, and it is thought if she had been able to stand another operation she would have been entirely cured.

CASE XVII.—*Proved to be malignant. Tumor at first very solid, afterwards turned soft and fluid. Menorrhagia and flowing checked. Operator, Kimball.*

Miss D., of Fisherville, N. H., 43 years of age, had a fibroid tumor of the uterus of long standing. The growth was very solid and quite prominent, giving the idea, as to size, of a six months' pregnancy. Examined per vaginam, the tumor was found projected downwards, filling up the vagina and pelvis, so that the neck of the uterus was not to be reached. Besides it pressed directly against the bladder, so that, as the finger passed behind the pubis, it was arrested at once in a cul-de-sac. Posteriorly the finger swept around a large globular tumor apparently about five inches in diameter. No cul-de-sac could be reached in this direction. The local and constitutional effects on the patient were very serious, locally interfering with the natural functions of the bladder, causing constant uneasiness and desire to micturate, and constitutionally producing exhaustion by the frequent and continuous hemorrhages, though they were not excessive at the menstrual epochs. She was unable to make much bodily effort. Electrolysis was advised and accepted without hesitation.

First operation.—February 18th, 1874. She was placed under chloroform and the electrodes were introduced in the usual way, deep into the tumor. Current continued ten minutes. No pain followed. Some slight vaginal hemorrhage appeared. It was thought to be menstrual, but out of season. Two days afterward the tumor seemed soft, as if containing fluid. It was punctured with a small trocar. Bloody serum exuded.

Second operation.—A week after the first, there was a second trial of the battery. Next day a rather profuse hemorrhage occurred. It soon ceased, but returned upon getting out of bed and walking about. There was loss of appetite and loss of strength. In the course of a week, hemorrhage recurred several times. She left my charge in Lowell in April and returned to Concord, N. H. Hemorrhage never came back, but prostration and want of appetite continued. About April 20th appeared a discharge of fetid matter which caused some anxiety to patient and friends. I visited her on the 23d. Tumor the same in size, but seemingly more soft. Made a puncture with a small trocar and the same bloody serum exuded as before, excepting that it contained pus-globules to some extent. The discharge was evidently from the uterine cavity. This case afterwards proved to be malignant on a post-mortem examination. Death ensued from prostration.

CASE XVIII.—*Large multilobar of six years' standing. Ascites and anarsarca. Excessive metrorrhagia. One application of galvanism for five minutes. Next day dropsies had disap-*

peared. Four more applications. Tumor sensibly reduced. General health improved. Operator, Kimball.

Mrs. C. B., residence Bridgewater, Mass., 53 years of age. Married for several years. No children. Had tumor in abdomen for five or six years previous to 1874. On examination, it proves to be a fibroid consisting of several lobes movable on each other and of various sizes. She has been suffering greatly from uterine hemorrhage of late to an alarming degree. It is attended with a dropsical state of the lower limbs and more or less of ascites.

First operation.—On the 15th of October, 1874, she submitted to galvanism. The electrodes were thrust into two distinct lobes. The current was continued for five minutes. Effect not marked except as to soreness of the regions where electrodes penetrated the interior of the diseased masses. Depth of penetration three inches.

Next day after the operation the *swelling of the limbs entirely disappeared; so also the ascitic effusion was dissipated.* Patient able to lie down and sleep comfortably, a circumstance that was very gratifying, seeing that for many months hitherto she had suffered great discomfort while lying in a recumbent posture. These results were considered sufficient for the time and the treatment was discontinued. After an absence of more than five months she returned to Lowell for further galvanic treatment. Size of tumor not changed—not increased—it was arrested. General health improved.

Second operation.—May 28th. Galvanism. One electrode was passed into the uterus per vaginam. The other electrode was passed through the abdominal parietes. Though followed by prostration, the operation was well borne.

Three more operations.—Three more applications were made at intervals of three days each. She is satisfied that tumor has lessened somewhat in bulk, because she is relieved from the downward pressure which has troubled her very much heretofore. Physical examination confirmed her opinion.

Remarks.—In this case the result was regarded as quite favorable, inasmuch as there was an arrest and diminution of the tumor. The experience with the anasarca and ascites tallies with other cases and goes to suggest the idea that the galvanic current may be one of the promptest means of relieving dropsical effusions which are associated with uterine fibroids, and possibly those cases that are without uterine complication. In no case of the present series with ascitic complication has galvanism failed to carry it off. It is hoped that further experiment may be made in this direction.

CASE XIX.—*Large interstitial fibroid; sensibly diminished under galvanism; in progress; still a patient; general health decidedly better. Operator, Kimball.*

Mrs. R., of Lancaster, Mass.; 40 years of age; has no children, though married for several years. She is a healthy woman except for a uterine fibroid which has been existing, so far as she can calculate, for five years or more. Menstruation natural. She has not been inconvenienced by the disease till within a few months. Now she feels that it is seriously affecting her general health, especially in regard to her ability to pursue her ordinary household duties. Size of tumor, abdominal portion, five inches in diameter. The shape is irregular.

First operation.—On the 10th of November, 1874, the battery was applied at Lowell Hospital, in the usual manner. No unpleasant effects followed, except a sense of nervous prostration. She returned home after this, and subsequently she came back again for a *second series* of applications. When these were completed, she again went home and remained until March 27th, 1875.

Third operation.—On this date galvanism was applied the third time. It was well borne. Tumor sensibly diminished. General health decidedly improved. 1887, housekeeping and doing her work.

CASE XX.—*Enormous growth; cervix uteri nodular; disabled; excessive and frequent metrorrhagias; patient losing ground; effect of eight applications in eight months, reduction of tumor one-half; nodules removed; hemorrhages stopped; general health restored.* Operator, Kimball.

Miss F., of Newburyport, Dr. Howe's patient, came under my charge for treatment in November, 1874. She presented a fibroid tumor of the uterus of very large growth, filling and distending the abdomen to a great degree. The cervix uteri was nodular. The tumor had been growing for at least six years, and probably for a longer time. She has been able to discharge the duties of house servant till within the last few weeks. She is now quite disabled in this respect, and has given up all employment requiring bodily activity. Age 38. Never married. Greatest difficulty metrorrhagia, which is frequent and excessive, having no periodical relation to menstruation. She is now in very feeble health, a good deal emaciated, and feels that she is rapidly losing ground.

First operation.—Galvanism was applied in the usual manner. The effect was marked by no special disturbance, local or general, except perhaps a sense of prostration. Appetite good. Sleeps well. Pulse natural.

Second operation.—Forty-eight hours after the first application, the battery was again applied. The effect was the same, only that the prostration seemed greater. Swelling of the right lower limb came on in the course of twenty-four hours after the operation, attended with severe pain.

Six more operations.—Between the 22d of May and the 5th of June, 1875, galvanism was applied six times. The third time there was a free bleeding from one of the punctures, but no harm resulted from it. Four times an electrode was passed per vaginam

into the projecting portion of the fibroid as found occupying the upper part. The effect of these applications was to directly diminish the growth one-half in size. The nodular condition of the cervix uteri was removed. The profuse metrorrhagias stopped; the malaise was relieved. Patient has reported in person within six months that she was very well indeed. Tumor still diminished. The result in this case was marked enough to be palpable to all. The relation of cause to effect was so close that it cannot be a mistaken view that regards the electrolysis as of great therapeutic value.

CASE XXI.—Small fibroid; marked relief; able to stoop, bend forward, and tie her shoes, also to sit erect in her chair; all which she could not do before; tumor diminished. Operator, Kimball.

Mrs. W., of Portsmouth, N. H., widow, 50 years of age, had one child 28 years old; she is not of vigorous constitution. Twenty years ago she had typhoid fever, and more recently some pulmonary difficulty which led her physician to suppose her case hopeless as to recovery. Several years ago it was discovered that she had some unnatural growth in the pelvic region. Examined by her physician, her difficulty was declared to consist in a fibroid enlargement or tumor connected with the uterus. The size was not greater than a large orange; shape irregular. It was easily moved from side to side of the pelvic cavity. A portion of the tumor, or perhaps a separate and distinct mass of the same character "fibroid," was felt pressing back upon the rectum. Notwithstanding the small size of the tumor or tumors, the inconvenience to the patient has been very great, so much so that she has found it very difficult to fulfil the ordinary duties of her household, not so much on account of pain, as of a sense of "pressing down," preventing her from stooping or bending forward.

First two operations.—Early in January, 1875, she came under my charge for treatment, and galvanism was applied in the usual manner. The effect was very slight as regards its impression on the general system. No variation of pulse or other functional disturbance followed.

Third operation.—On January 23d, 1875, operated for the third time. One electrode was entered into the enlarged neck of the uterus per vaginam, the other into the solid mass above the pubis. Current was continued for five minutes; she went home. March 27th, she returned for further trial of electricity, and reports favorably of her condition: whereas formerly she was unable to stoop or bend forward, and whereas she was obliged when sitting to bring her pelvis forward with shoulders laid back against the back of the chair she was occupying, she can now stoop and sit comfortably in an upright position. For the space of two years she had been unable to walk any considerable distance, now she walks easily without suffering. Health generally is much improved. Tumor but little lessened in size.

Fourth operation.—Electrolysis for fourth time on the 28th of March, 1875. The electrodes were introduced as on January 23d, per vaginam and per abdominal parietes. She came out from the effects of the operation well and suffered none in consequence. The tumor was diminished.

CASE XXII.—*Small tumor increasing; sensibly diminished by galvanism; afterwards it increased.* Operator, Kimball.

1874, December 1st, Miss ———, 34 years of age, has been aware of the existence of a fibroid tumor in the abdomen for about two years, the fact having been brought to her notice by her attending physician. At first its growth was slow; within the past six months its increase has been much more rapid and attended with considerable discomfort. At present the size of the tumor is about the same as that of an infant's head at birth. It is very hard and quite movable. Attempting to make a vaginal examination, it was found that there was a complete occlusion of the vagina. An extremely small aperture, however, allows of the escape of the menstrual discharge which occurs at regular monthly periods. General condition healthy. Rather small in stature, dark complexion.

First operation.—On December 3d, the battery was applied through the abdominal walls. The electrodes were passed into the tumor two inches deep on either side. The immediate effect was not marked. The pulse was not disturbed. The surface of the body maintained at the usual warmth. On awaking from the effects of the chloroform, she expressed no suffering; four hours after operation, she complained of soreness across the upper part of chest, especially in the act of taking a full breath, seeming, the patient remarked, "like an attack of pleurisy." This was on account of a pain at a particular point in her right side. The pulse was not disturbed and there was no feverishness.

December 5th. Second operation.—Current was continued for six minutes. No marked effect on pulse or other function. Twenty-four hours after operation says she feels as well as ever. The opening of the hymen at this time was enlarged with a bistoury, and still further by the finger.

December 30th. Third operation.—December 31st, slept pretty well through the night and feels well this morning. Treatment suspended.

Fourth operation.—1875, April 16th, submitted to another operation of the battery, inasmuch as the size of the tumor was not materially diminished since last operation. General health improved.

Fifth operation.—May, 1875, there was another trial of galvanism. Both electrodes passed through the tumor. No marked change since last operation.

Sixth operation.—June 16th, 1875, galvanism was repeated; one electrode passed per vaginam; tumor sensibly diminished; op-

erations suspended. At the last report it had increased in size again. General health good. 1887, same report.

CASE XXIII.—Large fibro-cystic reduced one-half by electricity; relieved, but not wholly. Operator, Kimball.

Mrs. S., residing in Lynn, Jefferson Co., N. Y., the 4th of June, 1875, came to Lowell accompanied by her physician, Dr. W. W. Jewett, of Chaumont, N. Y. She was 48 years old. Had several children; the youngest 14 years of age. She aborted once about five years ago. General health is pretty good. She does not suffer much from hemorrhage. It never has existed to a very excessive degree, and consequently she has never been much weakened thereby. Examination demonstrated the existence of a lobulated fibrous tumor of the uterus, extending downward into the pelvis. The growths were gradually increasing in bulk; one-third during the past six months.

First operation.—Electrolysis was employed this day. One electrode was introduced into the uterus per vaginam; the other was introduced through the abdominal parietes.

June 6th. Second operation.—Both electrodes were passed through abdominal parietes. This procedure was followed by some pain, which soon passed away. She afterwards returned home with her physician, a battery, and electrodes; he was instructed how to use them.

Eleven more operations.—His report, Dec. 14th, 1875, was as follows: "She has had electricity eleven times. The tumor was reduced one-half in size, and her health very much improved. The ninth operation caused a leakage of serum. At the next operation I used an aspirator, and removed sixteen ounces of fluid from the upper part of the tumor; before removing the first quantity of fluid she was very much bloated, felt very uncomfortable, and some sharp pain. The tumor seemed to float about very easily. There is very little difference in the condition of the attachment to the neck of the womb. The kidneys do not secrete their proper amount of urine. She is taking diuretics with very little effect."

Nov. 29th, 1886. Letter from Dr. Jewett.

"Mrs. Spicer was benefited by her treatment for the first three months. Tumor smaller, then enlarged; filled with serum; aspirated at least two quarts, then hardened and increased in size; was removed by Dr. Kimball; weighing about twenty pounds, with a number of deposits of pus. She lived about thirty-six hours; the tumor was removed together with the uterus."

Remarks.—The occurrence of a fibro-cyst is not uncommon; it is, however, unusual for the galvanism to act as a diuretic. Softening of the fibroid is sometimes seen spontaneously occurring, and it is the most rational event to be expected when interference is made with galvanism.

CASE XXIV.—*Large tumor; metrorrhagia; obstinate; remarkable reduction after the lapse of two years. Operator, Kimball.*

Miss E., of West Hanover, Mass., in April, 1873, consulted the writer on account of a large fibroid tumor of the uterus. She was 43 years of age; never married. From excessive hemorrhages, added to constant anxiety of mind, she had become much exhausted, and her constitution was decidedly becoming much impaired. She had undergone much treatment, general and local, in vain. I then advised electrolysis, but she chose to wait awhile. Soon after my return from Europe she called on me again; her condition was the same as when I last saw her, except a slight increase in the size of the tumor.

First operation.—After many misgivings and doubts, she finally determined to submit to the operation of galvanism, but it was not until early in February, 1874, that she was chloroformed and the electrodes were passed deep into the tumor on either side of the median line just below the umbilicus; the current was maintained five minutes. No ill effects—that is, no suffering of any kind—followed the operation. A little soreness was felt for a few days through the region of the tumor, and nothing more.

Second operation.—Seeing no perceptible results from the operation, a second trial was made February 17th, 1874. The electrodes were entered into the tumor to the same depth, but at different places; the current was continued ten minutes. The effect was more marked; more prostration and more local pain and soreness; also a slight discharge of a catamenial character, quickly changing to one of bloody serum.

More operations.—Several operations followed these essays, apparently without result, and the patient was discouraged and dissatisfied; however, it seemed that time was an important element in her case, as will be judged from the following letter.

ABINGTON, MASS., Sept. 13th, 1876.

Dr. Kimball.

“I wish to write a few lines to inform you of my improved condition. When I last wrote you, on July 1st, 1876, I was very much debilitated and suffering in a way that seemed to imply that my case was a poor one, and that I was worse in every way. Since that time my general health has been gradually improving, and for the last six weeks the size of the tumor has very remarkably diminished. It is very sudden and unexpected to me, but so certain has the decrease been that I could not forbear telling you of it. I hope to see you some time not far off in the future, and that you may be able to believe with me that the change is greatly for the better. . . . I remain, very thankfully yours, R—.”

Remarks.—This case shows that speedy results are not to be seen in all cases; indeed, when the dense and tough texture of uterine fibroids is considered, it would naturally be expected that one would have to wait a long time for the disappearance

of the growths after an impression had been made upon them by some external force. Perhaps a more desponding, trustless, and sensitive patient never presented herself with a fibroid, and the pleasantness of the result is heightened by this fact. None should say that *no* result had been attained by this operation unless two years at least have elapsed.

1886, Dec. 12th. This patient writes from Abington, Mass., "It is not entirely removed, but gives me no serious trouble. Am not strong, but general health good."

CASE XXV.—*Proved to be malignant. . . . Very hard, lobed tumor, with irregular surface; softening and enlargement; use of percutan galvanism with some benefit. Operators, Kimball and Cutter.*

Mrs. L., residing in Woburn, aged 38 years, married for a few years only, with no children, noticed an enlargement in abdomen three or four years ago. She has metrorrhagia, which has blanched her somewhat. Naturally a brunette, she presented a peculiar appearance. An examination showed her disease to be abdominal and pelvic fibroid, very hard, lobed and irregular surfaces.

In June, 1875, she was operated upon with the battery several times. There was no relief or marked effect except vomiting and terrible suffering in the abdomen. Afterwards the tumor proved to be malignant. The patient was living in a miserable state at last accounts.

1877, March 28th. Condition terrible. In very great and constant pain in the abdomen, relieved only by large doses of morphia. Vomits a frothy matter constantly. In bed mostly. Appearance bad. Countenance yellow and cachectic. Says tumor is not increased in size. Still is very large, multilobar. *Softened and fluctuating.* When operated upon it was hard and gritty. No metrorrhagia. Measures thirty-six inches around the most prominent part of the abdomen.

April 3d. The writer, judging from Miss C.'s case, thought that the percutan method might possibly benefit her, because now the tumor had metamorphosed from a solid to a cystic or semi-solid state. With Dr. Kimball's knowledge and consent, she was supplied with a carbon and zinc battery, ten pairs of plates six by one inch, one-fourth and one-eighth inch thick respectively. Same fluid as employed with the large battery. The elements were arranged on my own plan. The combination, when excited, decomposed water readily, but did not produce pain or escharosis. She was instructed to employ it three hours daily. Copper discs, one and one-half inches in diameter and one-eighth inch thick, constituted the electrodes. Advised St. Leon's spring water for constipation.

April 12th. Has faithfully used the battery. Measurement,

thirty-two and one-eighth inches. Pain in bowels very much abated. Morphia disused. Tumor harder, denser, and smaller. Has pain in feet and limbs. Ankles and the left wrist and elbow swelled. Bowels constipated. Ordered cotton packs and lemon juice.

27th. Has vomited but once or twice since the battery was applied. Before it was constant and distressing. Measurement thirty inches. Lies mostly in bed. Feels well except the rheumatism.

May 5th. Looking better. Thirty inches. Uses battery two hours daily. Drs. W. S. Brown, of Stoneham, and J. M. Moore, of Woburn, examined the case. Both thought it hopeless. Pelvis was found well filled with the fibroid. Fluctuation and tilting on pressing the abdomen.

May 13th. Measurement thirty-one inches. Bowels quite resonant on percussion. Severe chills at night. Been out of doors. Husband thinks she is not better.

22d. Thirty-one inches. Suffers from the east winds. Bowels acted upon favorably by the St. Leon's spring water. Animal food disgusts her.

30th. Ankles swelled. Abdomen the same. No return of the pain. Some vomiting.

July 10th. Thirty-one inches. Confined to bed. Diarrhea. Mouth sore. Tongue clean. Has daily very severe paroxysms of chills and suffers in them so that she appears *moribund*. Pain not returned to abdomen.

August. Discouraged and gave up treatment.

September. Improved.

October 2d. She died. No autopsy.

CASE XXVI.—*Tumor arrested; able to stand or walk without pain, which were impossible before operation; arrest of tumor continuing about two years, when it increased again; in progress.* Operator, Kimball.

Miss C., of Stoneham, age 40. Tumor eight inches in diameter. Very hard. Has existed for three years previous to January, 1875. Menses irregular, causing much suffering, besides uncomfortable feelings. Menstrual intervals are two or three months. It puts her in pain to walk or stand.

Three operations.—At the time noted above, she submitted to three operations. They were well borne and the growth of the tumor was arrested for about two years. Meantime she had removed to a distant part of the country, rendering the application of galvanism so difficult as to prevent its use.

December, 1876. She reports herself mainly as follows: "General health and appetite good. Quite fleshy. In respect to taking exercise is much better. Is able to walk quite often to and from (six miles) the city of Cincinnati and while there she goes about on foot, but comes home tired out. At home she sits and sews. Food troubles her by fermenting in the stomach and a decent

meal renders her uncomfortable." She adds: "I think the treatment helped me, but do not think the tumor diminished." Another communication, recently received, states that she contemplates further treatment.

June, 1877. She reported as being quite well, but no diminution of the tumor.

CASE XXVII.—*Fibro-cystic and ovarian; large abscess; many operations; arrest of development; ascites; peritonitis; operations remarkably well borne under the circumstances. Operator, Kimball.*

Mrs. —, of —, aged about 35 years. Married for several years, no children; in June, 1874, came under my observation and treatment. She had been under the care of Dr. Atlee, of Philadelphia, for a fibroid uterine tumor and was sent by him to make a trial of galvanism. She was suffering not only from a very large interstitial uterine growth, but also from ascites, for which she had been often tapped, besides a large abscess in the abdominal walls, situated mainly in the median line half way between the navel and the pubis. This abscess discharged a saucerful of matter daily and evidently it was unconnected with the peritoneal cavity (an error). The case was not at all promising for treatment of any kind, and no assurance of any considerable benefit was given as to the effect of galvanism which she had come purposely to try. Before submitting to the battery, she was tapped and about ten quarts of fluid were drawn away.

First operation.—Next day, the battery was applied. The electrodes penetrated the tumor three inches and were allowed to remain ten minutes. No unpleasant effect resulted and next day the patient felt comfortable in all respects.

Three days afterwards, the battery was applied for the *second* time. Results the same and no appreciable effect from either operation. Went to — and after an absence of several weeks returned to Lowell and *was again operated upon*.

In July went to Nantucket and remained there through the summer. Came to Lowell again in September, when galvanism was applied through *abdominal walls* as before. The day after this application of the battery, she returned home. Number of operations *five in all*. The absolute effect was difficult to estimate. "The patient declared that she feels confident the symptoms generally much improved. Tumor arrested—not lessened nor increased." It is worthy of remark that the menstrual function was very regular from the beginning of the disease. The galvanism was applied by Dr. Paddock after her return to Pittsfield.

The following is her subsequent history as given to the writer in a letter written by the physician in question.

December 16th, 1876. . . . "After returning from Lowell in September, she continued to be in about the same state through the winter. Electrolysis was performed November 30th, Decem-

ber 4th, 18th, and 29th, at each operation much serum escaping from the punctures made by the electrodes. Once quite a quantity of gelatinous substance oozed from the punctures. Electrolysis was not done after the 29th. During the winter, there was a profuse discharge constantly occurring from the fistulæ at the umbilicus of serum and sero-purulent matter. This refers to the parietal abscess. She was able to be out of the bed nearly every day throughout the winter. The size of the abdomen continued about the same. Toward spring she became weak, very much emaciated, and despondent. About the 20th of April, 1875, she was moved a short distance from her own home to her mother's, hoping that the change would cheer her up a little. On the 23d of April, she began to have diarrhœa which continued for several days. Her pulse increased in rapidity and became very weak. Her facial expression was sunken and anxious. Her stomach was very irritable and nearly everything taken was vomited. In fact the symptoms of peritonitis increased in severity from this date to May 1st, when she very suddenly expired. The post-mortem examination, in which I was assisted by Dr. J. F. Adams, was made a few hours after death. The intestines occupied the upper part of the abdomen. The fistulous opening at the umbilicus was found to communicate directly with that portion of the peritoneal cavity not obliterated which contained the intestine. In a fold of the small intestine was found a recent perforation from which the contents of the intestine oozed. The anterior portion of the abdomen below was filled with a mass of gelatinous cysts, with here and there a small cyst filled with serum. Behind this mass was *the uterus, about the size of a uterus at the the fourth month of pregnancy*. Just behind the uterus was the large intestine passing directly up to the upper part of the abdomen. Behind this and occupying all the posterior portion of the abdomen, extending from low down in the pelvis to the liver and from the extreme left to the extreme right of the abdominal cavity was an immense cyst filled with straw-colored serum, in quantity between sixteen and seventeen quarts. Between these cysts—the gelatinous in front and the serous behind—the uterus, rectum, and descending colon were found. The gelatinous cyst appeared to be connected with the right side of the uterus and the serous with the left side. The ovaries were entirely obliterated, and after a long search not a trace of either could be found. Peritoneum covering the small intestine in the cavity with which the fistula communicated was ulcerated and bathed in pus. The perforation in the intestine was evidently produced by ulceration in the peritoneal cavity passing through the intestinal wall."

With so much disease it is remarkable that the patient bore the deep punctures so well. It is quite evident from the history that both of the large cysts were punctured, as both serum and a gelatinous fluid exuded. It is also a remarkable case as showing the long tolerance of the peritoneal cavity of inflammation and its products. The abscess which was regarded as parietal was proven

to be also peritoneal, and much if not most of the pus that escaped must have come from the peritoneal cavity, as no mention is made in the careful and clear report given of any cavity in the parietest large enough to have kept up so copious and long-continued a discharge. As to the effect of electrolysis it was not an encouraging case.

CASE XXVIII.—No effect from galvanism at first; after two and a half years, the tumor apparently softened into a cyst; diminished somewhat by the percutan application of galvanism. Operators, Kimball and Cutter.

Mrs. E., of Newburyport; February 26th, 1875; widow 38 years old; one child, 13 years of age; husband died seven years ago. Her first notice of any uterine trouble was in 1869, when she suffered from an attack of hemorrhage immediately on her return from a tedious journey to the West, to which journey she attributes this occurrence. Ever since she has been suffering more or less from hemorrhage at each returning menstrual period.

About four years ago, she first noticed an enlargement in the left iliac region. At this time she submitted to an examination by a skilful surgeon, who at first supposed he had discovered a uterine polypus, but finally concluded that the uterus alone was diseased. No particular change has taken place as to the hemorrhage since that time, but the tumor has increased to the size of a nine months' fetal head. She is now anemic and thinks that she is continually and gradually failing.

Examined per vaginam, the os uteri is found hard, somewhat open, with rough irregular edges, not very unlike incipient cancer. This is attended with a thin serous discharge, not offensive nor painful.

First operation.—This day was performed the first operation of the battery. The electrodes were thrust into the tumor on either side two inches. The current was continued for five minutes. No special manifestation resulted. Two hours after the operation the patient declared herself as feeling as well as usual.

March 2d. Second trial of the battery. Result same as before.

March 6th. The third trial was followed by some pain in the region of the tumor and a slight hemorrhage from the vagina.

1877, August 21st. Measures thirty-six inches around the largest part of the abdomen. Tumor presents a soft and fluctuating feel, exactly as if containing fluid. No vaginal tumor. Os uteri smooth and open enough to receive the forefinger. Uterine sound penetrated seven inches. On tilting the tumor while the sound was buried in the cavity of the womb, the handle swayed backwards and forwards. Aspirated with a hypodermic syringe and obtained a little clear sticky fluid which contained none of Drysdale's or Gluge's cells. Encouraged by the result in Case XLVI. it was decided to try the effect of the strict diet and the galvanism from the small battery described in the said case.

August 26th. Uses battery for three hours daily. Measures thirty-five inches. 31st. Reports having been unwell and differently from usual. Previously she had a copious flow intermingled largely with colorless fluid. Also usually she has dyspnea on exertion for a week after menstruation; now none, and the discharge was scanty and blood alone. Complains of vesication from the zinc electrodes. Noticed a wrinkling of the skin after using the battery. Measurement thirty-four inches. A fluid of a sticky adhesive and slightly reddish color flowed over my hand in conducting the examination. Under the microscope it was found to contain red blood-globules, pavement epithelia, and fibrin coagula. No ovarian cells.

September 2d. Reports several gushes of fluid from the vagina. The specimen shown by her, about two ounces, was slightly turbid and ropy, like the white of egg. Coagulated by heat so as to be solid, like paraffin, and held fast to the spoon in which it was heated, when turned upside down. Sulphuric acid also coagulated it. Microscopical examination showed it to contain epithelia and fibrin coagula. Said the battery made her feel faint.

September 8th. Thirty-six and one-half inches. Putting on flesh. Countenance improved. Bowels bloated. "Appetite enough for three men." Likes her strict diet.

10th. Tumor evidently furrowed anteriorly from fundus to pubis.

14th. Thirty-six inches. Can stoop over or sit in a chair and button up her shoes—a thing she has not done for months. Discharge of glairy fluid nearly ceased. Appetite ravenous.

25th. Been unwell and lost less blood than before. Thirty-four and one-half inches.

28th. Dr. Kimball examined the tumor and pronounced it decidedly diminished in size.

October 3d. At his advice, I introduced a large-sized aspirator needle deep into the tumor through the abdominal parietes in the median line. Obtained about fifteen drops of fluid somewhat bloody, followed by a clot of blood. No further fluid obtained even after considerable force exerted in pumping.

October 5th. States that there was a vaginal discharge after the aspiration which appeared exactly like that procured with the aspirator.

16th. At home engaged in house-work. Use of battery and diet continued.

Remarks.—The idea of the substitution of the small-sized element battery in place of the large one figured on page 114 is in keeping with the original selection of a battery. Fluid or semi-solid collections are supposed to be acted upon by the *intensity current*; solid growths by the *quantity current*. It may be a mere fancy, but the writer is trying to see if it is so in fact.

CASE XXIX.—*Enormous growth; nineteen applications; effects*

marked by an establishment of good health and decided diminution of tumor. Operator, Kimball.

Mrs. C., of Dubuque, Iowa, aged about 42 years, came to Lowell in the winter of 1874, being at that time in an invalid state on account of a large fibroid tumor of the uterus. She had been treated for more than the past year by Dr. Atlee, of Philadelphia, taking internally all the while the chloride of ammonium and also applying the same to the outside of the tumor in the form of a solution. The disease was not benefited by this treatment. The tumor continued to increase and the system generally was becoming more or less disturbed. By the advice of Dr. Atlee, she applied to me for the purpose of trying the effect of galvanism. The tumor at this time occupied most of the right iliac and hypochondriac regions. It was very hard and in size not less than eight inches in diameter. It seemed to involve pretty much the whole uterine structure. Examined per vaginam, the diseased mass could not be reached by the finger. The mouth of the uterus, however, was felt just behind the pubic arch. General health of patient quite bad.

First operation.—The battery was applied for the first time on the 4th of December, 1874. The current was continued through the tumor for five minutes. No unpleasant symptoms followed.

December 9th. Second trial of battery. The current was passed through in a different direction for five minutes. Patient and friends insist that since the first application of the battery the tumor has sensibly diminished and become softer.

December 30th. Battery applied for the third time. Effect very profound and decided. Attended with prostration, remarkable slowness of pulse, coldness of feet, pallor of face, etc. Reaction soon followed and all unpleasant symptoms passed off.

December 31st. Patient makes no complaint of the effects of yesterday's treatment and feels as well as ever. Tumor appears smaller. Such is also the opinion of patient and friends.

January 6th, 1875. Fourth operation.—The effect on the pulse and respiration was marked, but less than the last. The current was continued for six minutes. Patient insists that the size of the tumor is sensibly diminishing. She has resumed the use of the chloride of ammonium.

Further operations were conducted about once a week till she had submitted to *nineteen operations*, the largest number ever administered to any one patient. She returned home to the West. Lately her sister wrote that Mrs. C. was attending to her duties as well as ever. Her general health has become perfectly restored and established. The writer added that she thought it my duty to persevere in this line of treatment, judging from the success in this case. When the patient came under galvanism, the tumor was rapidly increasing. By the operations, the growth was arrested at once and very much diminished. This case shows a tolerance of interference which is worthy of note. It also teaches perseverance in striking a succession of blows.

(To be concluded.)





Joseph Anthony George Smith
Wm

IN MEMORIAM.

KARL SCHROEDER.

(With Portrait.)

DR. KARL SCHROEDER, professor of gynecology and obstetrics at the University of Berlin, died after a short illness on February 7th last.

Prof. Schroeder was born on the 11th day of September, 1838, at New Strelitz, grandduchy of Mecklenburg. He attended the lower schools of his native town, and there also passed his final examination in classics before entering the University. He began to study medicine in Würzburg during the winter term 1858-59. After spending two years as a student at Würzburg, where he is said to have been an active member of one of the *Corps*, he went to Rostock and prepared for his first examination in anatomy, physiology, and the natural sciences. Having passed the same, he returned to Würzburg in the summer of 1861 to take up the study of clinical medicine, and then again to Rostock in the fall of 1862; there during the following year passing the state-examination, and also taking the degree of M.D. He immediately became assistant to the professor of clinical medicine at Rostock, but held this position only for a short time, preferring to accompany Veit to Bonn, whither the latter had been called, and devoting himself solely to the study of gynecology and obstetrics. He remained as assistant to the clinic at Bonn until 1868. In 1866, he had become lecturer (*Privatdozent*). At that time he was called to Erlangen to fill the chair of Obstetrics, just vacated, and received the title of extraordinary professor; but scarcely a year elapsed before he was created an ordinary member of the medical faculty. He continued as director of the clinic at Erlangen for eight years, when he moved, for a last time, to Berlin, as successor to Martin, first to the Charité Hospital, and finally, five years ago, to the newly erected Universitäts-Frauenklinik, in the Artilleriestrasse, one of the finest and best endowed institutions for clinical instruction in the world.

It would prove a difficult task to do full justice to the literary work of one who, almost entirely engrossed by the duties incumbent on him as director of a clinic, both in hospital and private practice, nevertheless labored so assiduously for the advancement of the science which he had chosen as his life-work. We will attempt, however, to notice Prof. Schroeder's most important contributions. His first publications that attracted attention were his researches on retro-uterine hematocele, "Kritische Untersuchungen über die Hematocele retrouterina," Bonn, 1866; "Einseitige Haematometra bei Verdoppelung des Genitalcanals," *Berl. Klin. Wochenschrift*, 1866, 38; and "Drei Fälle von Haematocele retrouterina," *Berl. Klin. Wochenschrift*, 1868, 4 and 5. The pathology, symptoms, diagnosis, and treatment of the diseases are discussed, and illustrated by cases from the author's own practice, and attention called, for the first time, to the differential diagnosis of the two affections. In 1866 he further published, in the *Monatshefte für Gynaecologie*, "Temperaturbeobachtungen im Wochenbett," and in *Virchow's Archiv*, "Zur Lehre der pathologischen örtlichen und allgemeinen Wärmebildung," wherein elaborate tables of temperature-measurements in the axilla, anus, vagina, and uterus are recorded in non-pregnant and pregnant women, and during labor, and explanations offered for the difference in local warmth under the various conditions indicated. In 1867, there appeared from his pen a monograph, "Schwangerschaft, Geburt und Wochenbett," 248 pages, treating the physiology and pathology of pregnancy from the author's own point of view, and with little reference to literature already extant on the subject, a large number of his own cases being interspersed in the text. No doubt, this treatise was the precursor of his text-book on obstetrics, the first edition of which appeared in 1870, the subject-matter in both being similarly disposed of. In 1867, he also contributed a paper, "Ueber die verschiedenen Messungsmethoden der conjugata vera," in the *Monatshefte für Gynaecologie*, explaining the inaccuracies arising under certain conditions in the measurements of the conjugata externa and diagonalis. It will be noticed that up to this time Prof. Schroeder had been a frequent contributor to the current literature of gynecology and obstetrics, and if during later years his contributions were few, this was due to the publication of his two text-books on obstetrics and gynecology, respectively; the latter

of which appeared in 1874, and then, in 1868, he had, for the first time, assumed the directorship of a clinic, and with it responsibilities towards his pupils which, in a man of Prof. Schroeder's conscientiousness, must have been the equivalent of unrelenting scientific labor. His text-books, the vademecum of almost every German student of medicine, that have been translated into nearly all languages of civilized Europe, need only be mentioned. They were the means of his splendid academic career and remain the lasting memorials to his name. They have appeared in the seventh and ninth editions, respectively. In 1872, Prof. Schroeder wrote one of Volkmann's Vorträge, "Aetiologie und Intrauterine Behandlung der Deviationen des Uterus nach Vorn und Hinten," advocating the use of the intrauterine stem. In 1873, he again contributed to the subject of hematocele in the *Archiv für Gynaekologie*, "Ueber die Bildung der Hematocele retrouterina und anteuterina," describing the anatomical relations of these tumors to the surrounding viscera, the conditions under which they form, and the laws governing the action of free and encapsulated liquids in the peritoneal cavity. In 1874, he communicated a case of air-cysts in the vaginal mucous membrane in the *Deutsches Archiv für Klin. Medizin*. His following publications appeared almost exclusively in the *Zeitschrift für Geburtshülfe und Gynaekologie*, of which he was one of the editors, the greater part of them as reprints of papers read before the Gynecological Society of Berlin. They are: "Adenom des Uterus," 1877, distinguishing for the first time a diffuse adenomatous infiltration of the uterine mucosa and a polypous variety, a histological study. "Zur Operativen Gynaekologie," 1878, where, among other operative measures, Schroeder describes his method of total excision of the cervix, after incisions into the fornix vagina, in contradistinction to the funnel-shaped excision, and his method of excision of the mucous membrane of the cervix by transfixing, after lateral incision of the cervix. "Ueber die operative Behandlung der extraperitoneal inserirten Ovarialkystome," 1878, advocating partial excision of these ovarian tumors in difficult cases, and stitching of the remaining portion to the abdominal walls. "Die Laparotomie in der Schwangerschaft," 1880, containing valuable suggestions with reference to the diagnosis of pregnancy, complicated by ovarian tumor or myoma. The treatment is considered in connection with twelve of the author's

cases. "Ueber die theilweise und vollständige Ausschneidung der carcinomatösen Gebärmutter," 1881. The various methods of partial and total extirpation, and the indications for each form the subject of this communication. We notice that, under the head of total extirpation by the vagina, Schroeder recommends the tilting out of the uterus through the opened cul-de-sac of Douglas, ligaturing the broad ligaments from above, whereas of late he operated with the uterus in situ, ligaturing as he separated the attachments of the broad ligaments to the uterus. "Ueber Myomotomie," 1882. The intra- and extra-peritoneal methods of supra-vaginal amputation are compared with each other, and preference is given to the former. The suturing of the stump in tiers (layers) is recommended, also limited excision, if practicable, with the formation of a new uterus. "Ueber die Enucleation interstitieller Myome," 1884, an exposition of the various methods of myotomy, according to the location of the tumor, as they are now practised in the clinic at Berlin. "Die Excision von Ovarientumoren mit Erhaltung des Ovarium," 1885, advocating, in double ovariectomy, the wedge-shaped excision on one side, if possible, with consecutive suturing of the remainder of the ovary in young women, with a view to the possibility of later conception. "Ueber fortlaufende Catgutnaht," 1886. The continuous catgut suture is introduced in plastic operations on the vagina and perineum, and recommended for suturing of the stump of the uterus after supra-vaginal amputation. "Ueber die Castration bei Neurosen," 1886, in which he reports ten oöphorectomies for neuroses, in only two of which no improvement resulted. Conditionally, he approves of the indication for operation.

Communications from his pen have also from time to time appeared in the *AMERICAN JOURNAL OF OBSTETRICS*, of which he was a collaborator, and in the *British Medical Journal*. In conclusion, it is but just to say that what has appeared under Prof. Schroeder's own name forms but a part of his literary work, nor is it derogatory to the merits of his assistants and pupils to regard him as the intellectual author of much that has been published under their names.

To say that Prof. Schroeder was a brilliant clinical teacher would be untrue to the memory of the deceased. His style was not elegant, but always fluent, and his words were well chosen. His delivery was characterized by earnestness and self-

conviction, and these qualities won for him the admiration of zealous students. Never did he seek to reveal the lack of knowledge by flowery rhetoric; nor was there ever, perhaps, an occasion for this, and those who were fortunate enough to listen to any of Prof. Schroeder's clinical demonstrations must certainly have come away with the conviction that absolute confidence could be placed in what had there been uttered. He seemed to regard it as his greatest responsibility to impart to others as definite acquisitions of his science only that which he, in his large experience, had thoroughly tested, and frequently newly formulated, and at those moments his desire to convince also his hearers of what with him had become an established fact became apparent in his earnest manner of expression.

He certainly possessed all the qualities essential to a good surgeon; above all, calmness and simplicity of procedure. At his laparotomies he was assisted by only one of his large staff, and the few instruments he used were placed next to him on a small elevated table, where he seized them himself. Prof. Schroeder operated very quickly, and it was sometimes remarkable with what accuracy and rapidity he performed plastic operations upon the perineum and vagina, when his short-sightedness, which he never corrected with glasses, is taken into consideration. He was a courageous, but not a reckless surgeon, and when he had, after due consideration, made up his mind to attempt operative interference, the magnitude of the act never caused him to shrink from the responsibility of undertaking it. In critical moments he inspired confidence by his composure, and prevented unnecessary action on the part of those assisting him. His operations were always attended by a large number of German and foreign physicians, and the eagerness with which invitations to them were sought for is sufficient proof that they were seen with satisfaction and profit.

One quality which tended to a great extent to facilitate the large amount of work at the Universitäts-Frauenklinik was Prof. Schroeder's punctuality. It was his custom to perform abdominal sections at an early hour in the morning, and at the time set down he would enter the operating theatre to find the patient already under chloroform, and to begin work immediately. The same accuracy prevailed in all his professional work with his assistants. His relations with them were most pleasant, though never cordial or intimate. He very seldom,

in leisure moments, gave them an opportunity of enjoying him socially, as is generally the agreeable and beneficial privilege of assistants at German clinics. It is, therefore, certainly the highest compliment to his memory to say that, despite this, he was regarded with affection and veneration by all who were fortunate enough to work with him, under his supervision. In his assistants he placed a large amount of confidence, and gave them ample occasion for personal work, and it certainly was one of his foremost merits to have been able to incite in his co-workers a longing for scientific research. Although, at his age, it cannot yet be said that he created a *school*, in the sense in which that term is used abroad, it must certainly be acknowledged that some of the best work in the allied sciences of gynecology and obstetrics has been accomplished by his pupils, and it is to be hoped that those who were, at the time of his death, enjoying the benefits of a more intimate scientific intercourse with him, will continue to labor in the field of science, and thus conduce to the perpetuation of his name.

His life at home is said to have been a most happy one. He leaves a widow and a large number of children to mourn his loss, and many friends and admirers to join them in their grief over one whose name will always stand forth pre-eminent in the annals of medical science.

FREDERICK KAMMERER.

NEW YORK, February, 1887.

CORRESPONDENCE.

INTRAUTERINE MEDICATION.

BALTIMORE, Feb. 14th, 1887.

MY DEAR DR. MUNDÉ:—I have read with much pleasure your “Plea for Intrauterine Medication,” in the *New York Medical Journal* of February 5th, 1887. I can heartily indorse every word contained in this paper as sound in theory and in practice.

If, as it is conceded, we get good results from direct medication to other mucous membranes, I cannot see why the intrauterine mucous membrane should be the only exception to this prac-

tice, in properly selected cases, and where the same amount of care in the administration is exercised as in treating the eye, throat, urethra, bladder, and rectum.

For twenty years it has been my daily practice to make local applications to the cavity of the uterus, and the greater my experience, the more firmly I am convinced that by this means I succeed in curing a great many cases in which I should utterly fail without it. I never use injections into any uterus which has not recently been delivered of a child or fetus or degenerated fibroid tumor, but rely upon cotton as an applicator to convey the medicine to the uterine cavity. I rarely use any other agents than Churchill's tinct. iodine or Monsell's solution of iron in glycerin (1 part to 2). Chromic acid should never be used in the cavity of the uterus, but an occasional application of this remedy into the cervical canal (especially when followed up in a few days with the iodine) is invaluable.

When beginning intrauterine medication, it is well to commence the treatment by accustoming the uterus to the presence of a foreign substance in its cavity before we apply our remedies, and this is accomplished by gently passing the sound for a few days. By this means we also clear and open the tract for the better entrance of our mop; and after this, if the canal is too narrow and not too rigid, a little gentle dilatation will enable us to carry all the medicine we desire to the cavity of the uterus, by making three or four applications, at one sitting.

Should the cervix be indurated, elongated, and contracted at the internal os, it should be cut and not stretched, and should then be allowed to heal before we proceed with the intrauterine medication.

These views have been more fully expressed in a paper which I read before the last meeting of the American Gynecological Society, on "Division of the Cervix for Antelexion of the Uterus, with Dysmenorrhea and Sterility." In this paper I took the ground, and I reiterate here, that it is of little use to divide the cervix in such cases if we do not follow up the operation with intrauterine medication, because in all such cases we find a diseased endometrium—cervical, or corporeal, or both. I have done this operation four hundred times, and when the parts are healed, I never fail to apply intrauterine medication. By these means I have cured many more cases of dysmenorrhea and sterility than by all other means combined.

In many of those cases in which we find the conditions men-

tioned in your paper, intrauterine medication is essential to a cure.

No one can be more thoroughly impressed with the importance of an early and thorough recognition of pelvic cellulitis than I am. No one more than I realizes the necessity for removing this condition of things around the uterus before we attack it internally. But we may clear the pelvis of all cellulitis and still have remaining a hyperplastic and subinvolted uterus, a flexed and strictured uterus with hypertrophy, and induration of the Nabothian and utricular glands; a uterus with fungus granulations growing from the endometrium; an undeveloped uterus which at sixteen to twenty years has never menstruated. These, in addition to those conditions which you have mentioned in your paper, are only brought to a successful termination by intrauterine medication.

Faithfully yours, H. P. C. WILSON.

THE VAGINAL TAMPON IN PELVIC ADHESIONS.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

IN the January number of your JOURNAL, you give the report of an article read by Dr. Coe before the New York Obstetrical Society, in which that gentleman is pleased to make an attempt to overthrow one of our standard methods of treatment without substituting anything better in its place. Dr. Coe's reasons for this are based on his experiments in the dead-house, his mechanical theory of the operation, and his own practice, which he admits was carried out in "a sort of perfunctory, half-hearted way."

Dr. Coe, in performing his experiments, evidently lost sight of the fact that his subjects were lying on their backs; a position not generally assumed, in this country at least, by patients when receiving treatment for an adherent retroverted uterus, which in itself is of no small matter, as the semi-prone or knee-chest position is one of the important factors, if not the chief one, in overcoming this disease.

Dr. Coe further says that "to stretch a suspended elastic cord by a force applied midway between its ends, both of these ends must have an unyielding attachment." That statement would do very well if we were dealing with sticks and rubber bands, but

as it is, if sufficient cotton is placed between the cervix and the rectum both of these ends become fixed, and then pressure from below will produce pressure on the contracted sacro-uterine ligaments, or the adhesions, as the case may be, which sometimes form in Douglas' pouch.

If, previous to the introduction of the cotton, the uterus be somewhat drawn down by means of a tenaculum, the packing is then brought more directly to bear on the posterior surface of the uterus, and after each successive packing it will be found that more and more pressure can be borne, which is at the same time made at a higher level in the pelvis. Of course, this method stretches the vagina somewhat, but when the patient reaches that state in which a pessary holds the uterus in position, the vagina will, as rule, regain its lost tone, or means can be taken to bring this about.

Even if it was only that the uterus became elevated by packing the vagina, even then the adhesions would be put upon the stretch, and in time sufficiently to allow the fundus to move forwards.

Of course, no method can be a success unless undertaken with zeal and determination on the part of the physician to do his best, whether it be by means of a "column" introduced in the knee-chest position, or by a less severe packing with the patient on the left side.

It would be unnecessary for me to introduce here the histories of cases occurring during my service on the house-staff of the Woman's Hospital, which I very easily could do, as I will venture to say that there is hardly any one engaged in the practice of gynecology who has not been a witness more than once of the great benefit derived from packing up a retroverted uterus, when done with care and skill on the part of the physicians, and patience and pluck on the part of the sufferers.

Before closing this letter, I would call Dr. Coe's attention to an article on the subject in question by Dr. J. W. Elliot, in the *Boston Medical and Surgical Journal* of Feb. 28th, 1884, in which a number of cases are reported.

ERNEST F. TUCKER.

62 W. 35TH ST.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

REPORTED BY THE SECRETARY, DR. H. C. COE.

Stated Meeting, January 18th, 1887.

DR. JOHN BYRNE *in the Chair.*

SPECIMEN OF INTESTINE, SHOWING HEALING PROCESS AFTER INJURY.

DR. SIMS exhibited a piece of small intestine, removed after death from a patient upon whom he had performed secondary laparotomy for the relief of obstruction following Tait's operation. Five days before, he had removed a pyo-salpinx which was firmly adherent and was dislodged with great difficulty. The patient's condition was satisfactory until the fourth day, her temperature not rising above 101° F. She then developed excessive tympanites which was not relieved by the usual enemata of turpentine and water. Cathartics and enemata were administered until the sixth day, when a rectal tube was passed up the gut to the height of three feet, with the hope of untwisting the volvulus, the existence of which was then clearly recognized. As the patient was rapidly growing weaker, and would certainly die if not relieved, a secondary operation was determined upon. She was anesthetized, and a fresh opening was made above the old one. A coil of small intestine was found twisted from left to right, and strangulating a loop. On account of the great distention of the transverse colon, it was necessary to puncture it in several places in order to relieve the tension. The punctures, or rather incisions, were so large that they were subsequently closed with fine sutures, the volvulus having first been untwisted. The patient's condition was already so bad that there was no hope of relieving her, and she died five hours later. At the autopsy, the condition seen in the specimen was noted, *i. e.*, in the short time that had elapsed since the operation, a considerable amount of lymph had been thrown out around the sutures, showing how Nature took care of wounds of the intestine.

ELECTROLYSIS IN THE TREATMENT OF UTERINE FIBROIDS.

DR. FREEMAN introduced the discussion by presenting a specimen of fibroid tumor, showing the results of electrolysis in the softening and disintegration of the interior of the growth. The history of the patient was as follows: Mrs. A., æt. 58, a native of Ohio, came to me from Georgia last September, suffering from a uterine tumor that made its appearance after the menopause, and had been giving her trouble for four or five years. Her sufferings had become more and more severe, so that she had used opium to

relieve them, until she became so habituated to the drug that she had taken no less than twelve hundred drops of McMunn's elixir daily. In the fall of 1885, she spent a few weeks in the Woman's Hospital, where it was decided that an operation was not admissible. She returned home and grew constantly worse, being troubled with obstinate diarrhea and dyspepsia. For three weeks before she came to me, she had been unable to sit up, and was brought north with difficulty by steamer. She was extremely anemic, her face and body being bloated, and her limbs anasarcous, the right nearly twice the size of the other. Her bladder was distended, and she was troubled with incontinence. On the 20th of September, I gave her ether, and introduced into the uterus an insulated platinum sound, connecting it with the positive pole of the battery, while a smooth, round, steel needle, properly insulated, was introduced through the posterior fornix into the tumor, and was attached to the negative pole. A current of eighteen cells, of a zinc carbon battery, was passed for twenty minutes. The patient took ether well, and had no reaction after the use of the electricity, but steadily improved in many ways. On the 1st of October, I repeated the operation in the same manner, using thirty cells for twenty minutes, without unpleasant results. The swelling of her face, body, and limbs disappeared, and her digestion was improved, but it was impossible to control the diarrhea. The pain ceased, and I attempted to withdraw her opium, but found that she could not do without it. She grew gradually weaker, and died on the 2d of November.

An autopsy was held fifteen hours after death. The body was much emaciated. There were no evidences of inflammation of the peritoneum or any of the viscera. The pelvis was completely filled by the tumor here shown, which was universally adherent and extended above the pelvic brim. It surrounded the uterus, and was attached to the bladder in such a way as to prevent that viscus from contracting, surrounded upon the rectum as far as its lower end. The tumor measured nearly five inches in its smallest diameter; on section, a large portion of its interior was found to be disintegrated—a condition the existence of which I had frequently inferred from the sensation communicated by the touch and on introducing the needle, but had never before seen. This tumor, at the time when the needles were first introduced, was very dense and hard throughout, and the needles could be driven into it with difficulty. My experience has been that after two or three treatments with electricity, the needle can be introduced more easily, and its point can be moved about freely in the interior of the mass, showing that it has undergone softening.

DR. T. A. EMMET thought that whenever electrolysis was sufficiently effective to cause disintegration of the tumor, it generally caused the death of the patient.

DR. FREEMAN said that the case reported was not an example of

the usual result of the electrolytic treatment. Two years before, he applied electricity to a patient who had two large fibroid tumors, only four *séances* being held. The growths rapidly diminished in size, and eventually disappeared entirely. The husband of this lady was in his office to-day, and mentioned that she was in perfect health, and that the past year had been the happiest of their thirteen years of married life. That very evening he had examined a patient thus treated who formerly had a fibroid as large as the fist, no trace of which could be discovered.

DR. EMMET did not doubt that there were many successful cases on record, but he had never been so fortunate as to see one. Whenever the current was strong enough to affect the tumor, it usually produced peritonitis that often terminated fatally.

DR. SIMS said that several years before, when practising in San Francisco, he had used electrolysis in several instances, but only obtained positive results in one case. This patient had a large fibroid in the anterior wall of the uterus, which pressed upon the bladder. It was so situated as to be easily reached with a needle. Once or twice a week he introduced a small insulated electrode through the anterior fornix into the tumor, the opposite pole being connected with a sponge which was placed over the abdomen: from fifteen to thirty cells of a galvano-faradic battery were used. This was in 1878. The tumor slowly diminished in size, and in 1880, the patient's condition was much improved. Five years after, she reported herself as much better, and on examination the growth was found to be only one-third its original size, while all the pressure-symptoms, especially the vesical, had disappeared.

DR. BYRNE asked what connection the tumor had with the uterus.

DR. SIMS replied that it was a sub-peritoneal fibroid, attached by a broad base to the anterior surface of the organ.

DR. WYLIE was skeptical as to the actual absorption of fibroids as a result of electrolysis, and was inclined to think that this treatment might do more harm than good. It should not be forgotten that these growths, after reaching a certain stage in their development, tended to become smaller, especially after the menopause.

DR. BYRNE presented a small fibroid tumor with the following remarks: My experience in the electrolytic treatment of fibroid tumors has been limited. Several years ago, I applied the galvanic current to a large uterine fibroid, fifteen *séances* being held. I thought that I did more harm than good, and since then made no further attempts to employ electrolysis until three months ago, when, after reading of the successful results obtained by Apostoli and others, I felt inclined to undertake a thorough investigation of the subject. Only one suitable case has thus far presented itself. The patient was an unmarried negress, who had a fibroid on the posterior wall of the uterus, that filled the hollow of the sacrum and pushed the cervix upwards behind the symphysis. I believed that the tumor was originally a loose, subperitoneal one that had fallen into Douglas' pouch and had subsequently increased in size, until it became firmly lodged. There was but little hemorrhage. As the growth was easily accessible through the posterior fornix, it seemed to be a fair case for testing the value of electrolysis. The battery which was used consisted of fifty cells, each one having a strength of one and three-fourths Ampères, the electro-motor

force being one and one-half volts; an accurate galvanometer was constructed, in order to measure the exact strength of the current. Apostoli states that he did not exceed two hundred milliamperes, but the galvanometer used by me would register five hundred.

The first application was made on November 18th, two needles, similar to those shown by Dr. Freeman, being passed into the retro-uterine mass about one and a half inches apart; ten gradually increased to fifty cells were used for ten minutes. The patient had four thorough, and one incomplete séance. After the last treatment, she had an attack of peritonitis that was nearly fatal; the tumor had clearly diminished in size. Last Sunday she told the house physician of the hospital that "something was coming from her." On examination, a fleshy mass was found at the vulva, which proved to be the tumor itself; a large opening was discovered in the posterior fornix, through which it had escaped; in short, that portion of the vaginal roof had completely sloughed away. It would seem as if the result of the electrolysis had been to cut off the vascular supply of the tumor, so that it gradually separated from the uterus. Whatever benefit may result from this treatment, there appears to be a decidedly powerful action when both the electrolytic and cauterizing effects of the current are combined. This was pointed out by Dr. Noeggerath in a paper written several years ago. If we can introduce our needles so deeply into the tumor as to produce complete disintegration of its tissue, its vascular supply seems to be cut off, and the mass becomes smaller.

The patient from whom the present specimen came away is doing perfectly well, and to-day expressed herself as feeling much better.

DR. EMMET asked for information. Was he correct in understanding that the tumor was situated subperitoneal on the posterior wall of the uterus, that the needle had been passed into it through the vaginal wall, and that the mass had escaped by the sloughing out of Douglas' cul-de-sac? If so, it was only a merciful Providence that saved the patient.

DR. BYRNE called attention to the fact that he had laid stress upon the reduction in the size of the tumor as a result of his treatment.

DR. EMMET had seen the same diminution in size produced by any irritant, such as a sponge-tent, which set up strong uterine contractions.

DR. BYRNE thought that this remark did not apply to his case, because the tumor was a subperitoneal fibroid, which would not have been influenced in the least by contractions of the uterus.

DR. WYLIE believed that fibroid tumors might reach their growth and disappear spontaneously.

DR. BYRNE admitted this; he had recently examined a lady who, ten or twelve years ago, had a large fibroid that had now almost entirely disappeared, the patient having passed the menopause two years before.

DR. WYLIE cited the case of a patient who had a fibroid tumor which was so troublesome that an attempt was made to remove it nine years ago, himself assisting at the operation; this attempt was abandoned on account of adhesions. Seven years after, the growth could not be detected; in the mean time there had been on several

occasions a discharge of necrotic and calcareous matter from the vagina that suggested the possibility of its spontaneous disintegration.

DR. EMMET said, when preparing the statistics for his book, it was found about nineteen per cent of the cases the tumor either disappeared after the menopause or the patient ceased to suffer from its presence. His experience was similar to that of Keith's; he had never seen a patient die from hemorrhage due to a fibroid.

DR. FREEMAN said that he had employed electrolysis scores of times, and only once had peritonitis resulted. In this case he had unfortunately passed the positive needle through the uterus into the tumor, and entirely through the latter and against the sacrum; in drawing it back, the needle became caught in the peritoneum and fatal peritonitis ensued. In his first case, ten years ago, he used an old sailor's needle, insulated, for the positive pole, and obtained a perfect result, the tumor disappearing entirely. He had a patient then under treatment with a fibroid tumor extending above the umbilicus, who has three times received a current within the tumor from thirty zinc carbon cells for thirty minutes without any unpleasant after-effects. She came down to her meals within three days after the treatment on each occasion. The tumor is rapidly diminishing. It was not desirable to obtain the cauterizing effects of the current, as Dr. Byrne had suggested, but simply the electrolytic. To this end the speaker introduced either an insulated platinum probe into the uterine cavity, or, if the tumor was attached by a sufficiently broad pedicle, a curved platinum needle from the uterine cavity into the base of the tumor, and attached to the positive pole, and a round smooth insulated steel needle into the tumor from the most convenient point, either through the abdominal parietes or through the vagina, and attached to the negative pole of the battery. If the latter was smooth, round, and properly insulated, there was no danger in passing it through the peritoneum; the only accident he had noted was the formation of a mural abscess on one occasion from the stripping of the insulating material from the needle. This was in his first case.

DR. WYLIE asked the speaker if he had ventured to puncture very soft or vascular tumors.

DR. FREEMAN replied in the negative, and added that he would never think of touching such a tumor as the specimen exhibited by Dr. Byrne. Electrolysis was particularly applicable to sessile tumors, or those with broad pedicles and well supplied vessels, as the absorbents could then gradually dispose of the disintegrated tissue.

Stated Meeting, February 1st, 1887.

The President, DR. P. F. MUNDÉ, in the Chair.

ANEURISM-NEEDLE WITH MOVABLE JOINT FOR USE IN VAGINAL HYSTERECTOMY.

DR. POLK said that he had always found great difficulty in controlling bleeding points promptly after the vaginal vault was incised, because we could not ligate the uterine arteries without some loss of time. Time was an important factor as regarded the

success of the operation, because from the nature of her disease the patient was always very weak. In order to secure the vessels of the broad ligament more readily, he had devised a blunt aneurism-needle with a movable joint, which was fixed by a button on the side of the handle. The point could easily be worked through the vaginal tissue in the lateral fornix and carried around the uterine artery, when the ligature with which it was armed was drawn down and the vessel could at once be tied, thus controlling all hemorrhage during the subsequent steps of the operation. As soon as both arteries had been tied, the cervix could be free from its attachments in about one-half the usual time. With this instrument, a pair of scissors, and a few compression-forceps, he had recently removed a uterus per vaginam with great ease.

THE PRESIDENT asked if the blunt end of the instrument could be forced through the tissues without any previous cutting.

DR. POLK said that it was only necessary to push the tissue against the point, and the latter would come through. He suggested that the instrument might be improved by doing away with the groove on the back, which is usually found in aneurism-needles, and by placing the fixation-button on the back instead of at the side. Dr. Janvrin added that it would be of advantage to have the handle longer. In reply to a question from the latter gentleman, Dr. Polk said that he did not separate the anterior and posterior fornices before securing the uterine arteries; it might be of advantage to incise the fornix before passing the needle.

THE PRESIDENT cited a case in which he had seen Professor Fritsch remove a uterus in a virgin, æt. 40. He began the operation by passing deep sutures through the lateral fornices around the uterine arteries, using large curved needles; in consequence of this preliminary ligation the patient lost very little blood. The operation in question was extremely difficult on account of the space in which the operator was obliged to work: he was compelled to divide the perineum in order to gain more room. The operation lasted barely one hour.

DR. CHAMBERS said that he had recently assisted Dr. Thomas in the performance of supra-vaginal amputation, nearly all of the uterine body being removed; preliminary ligation of the uterine arteries rendered the operation nearly bloodless.

DR. POLK remarked that in his last operation he had not lost more than half an ounce of blood; three ligatures were used on each side. The operation lasted fifty minutes.

THE PRESIDENT commended the instrument as one that had long been greatly needed.

DR. HANKS thought that a similar needle might be useful in primary perineorrhaphy.

SYRINGE FOR WASHING OUT THE ABDOMINAL CAVITY.

DR. HANKS showed a bulb-syringe and tube of large size; to the latter could be attached a hard-rubber tube with a strainer for drainage, or a Tait's cyst-tube. The syringe was after the pattern of Bigelow's evacuator, not having any valves; their place was

supplied by hard-rubber clamps that could be attached alternately on the proximal and distal side of the syringe. With this instrument fluid could be rapidly pumped into, and withdrawn from, the peritoneal cavity, or the fluid contents of a cyst could be evacuated without loss of time; other trocars could easily be used with this rubber bulb and tubing.

DR. CHAMBERS said that Dr. Thomas had recently used the instrument to empty an ovarian cyst, and had found it much more effective than the ordinary canula.

DR. HANKS had also used it successfully for this purpose.

THE PRESIDENT said that it was very desirable that some way should be devised of emptying a cyst that was situated low down in the pelvis, and did not project into the wound.

DR. HANKS said that this could not be done with his blunt Tait tube, but would require a smaller and sharper trocar.

DR. POLK did not see any particular advantage in washing out the abdominal cavity so rapidly in cases where suppuration was present; it was often desirable to leave the water for some time in order that the pus might soak off from the walls.

DISPLACED SPLEEN—SPLENECTOMY—RECOVERY.

DR. POLK mentioned briefly a few facts with reference to the case, which he expected to report *in extenso*. He was reminded of the same by the fact that the patient came to his clinic a few days before, looking and feeling very well. He began the operation under the impression that he had to deal with a pelvic abscess and probably pyo-salpinx, but found that the tumor was a spleen, which was about twice the size of an ordinary kidney, and rested on the anterior surface of the uterus, its convex side looking towards the hollow of the sacrum. On vaginal examination, the finger felt the cervix uteri, and just above it the spleen, so closely connected with the uterus that it seemed to be merely the enlarged fundus. After opening the abdomen, the spleen was found to be absent from its usual site. The misplaced organ was removed without special difficulty, and the patient recovered easily.

DR. NILSEN asked how large the pedicle was found to be.

DR. POLK replied that it was long and slender, and extended downwards in front of the descending colon, to which it was attached. The spleen was firmly adherent, so that it was necessary to tear it away.

DR. NILSEN said that the patient, whose spleen he had removed several weeks before, was looking plump and rosy, and had not been in such good health for years.

DR. POLK remarked that his patient's blood had been examined forty-eight hours after the operation, but no change was discovered in it. However, it was necessary to examine it not later than twenty-four hours after removal of the spleen in order to detect any change. In reply to a question from Dr. Grandin, he said that the indications for the operation had been severe pelvic pain, with vesical and rectal disturbance; moreover, it was supposed that the condition was pyo-salpinx. In answer to Dr. Harrison,

he said that there was a good deal of oozing after separating the adhesions, but no bleeding from the pedicle. Splenectomy presented no special difficulties except when the organ was sessile, and had a short, broad pedicle, containing a number of large vessels; this was the main difficulty encountered in extirpation of the kidney.

DR. CHAMBERS referred to an autopsy which he had performed upon a patient dying of leucocythemia; the spleen weighed fifteen pounds, but its pedicle was no larger than the thumb, so that the organ could easily have been removed.

THE PRESIDENT asked if a spleen enlarged from leucocythemia or malarial toxemia might not properly be removed after medication had been persistently tried in vain. He recalled three cases in his own practice (two of leucocythemia) in which the organ was enormously enlarged, but was freely movable. Would it not have been justifiable to extirpate them?

DR. CHAMBERS thought that he would certainly operate if such a case came into his hands now, because the patient would die if let alone, and laparotomy did give her some chance.

DR. FOWLER was much interested in the cases of splenectomy as viewed from a physiological standpoint; he had frequently removed the spleen in dogs, but they always died, after exhibiting an unnatural voracity. There were many theories regarding the function of the spleen, all of which were unsatisfactory; it was probably concerned in the formation of the white blood-corpuscles. That patients should actually be in better health after removal of the organ was certainly a remarkable physiological fact. There ought to be a marked change in the physical character and composition of the blood after the operation.

DR. NILSEN called attention to one change noticed in his patient. She was much more irritable than she had been before the operation.

DR. FOWLER questioned whether or not the primary trouble in leucocythemia and malaria was in the spleen; if it was not, of what particular use was removal of the organ?

DR. COE suggested that possibly in the two cases reported the displaced organ had become atrophied, or its functions had become otherwise impaired, so that its removal entailed comparatively little loss to the general system. It was a well-known fact that nearly all the successful splenectomies on record had been performed in cases of displaced spleen; while, on the other hand, removal of the organ when enlarged in consequence of leucocythemia had invariably proved fatal (sixteen deaths up to 1882). The small size of the pedicle and its relatively poor vascular supply seemed to indicate an atrophic tendency.

DR. POLK remarked that in leucocythemia the trouble was not confined to the spleen, since the glands were also enlarged. If the patient's general health was good, and the spleen was evidently the seat of the difficulty, there was no reason why the organ should not be removed. The question was whether we were justified in taking such serious risks, and whether the results were sufficiently positive to justify the operation.

THE PRESIDENT said that in two of the three cases to which he had referred the condition was splenic leucocythemia; when the spleen alone was diseased, he did not see why it should not be removed.

TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF PHILADELPHIA.

Thursday, January 6th, 1887.B. F. BAER, M.D., *President, in the Chair.*

DR. WM. GOODELL read a paper entitled:

A YEAR'S WORK IN OVARIOTOMY

(to be published in full in the *Medical News*). In it he stated that he had had during the past year fifty-nine laparotomies, but that, lest his paper should be too long, he should limit himself to the consideration of his ovariectomies. Of these he had had thirty-nine cases with three deaths.

Of these deaths, one occurred on the table from the difficulties of the operation. It was a dreadful case of intra-ligamentous cyst with universal adhesions from which it was shelled out without a pedicle. The ureter had to be dissected out for twelve inches, and the entire colon, womb, bladder, and small intestines were attached to the cyst. It was a very forlorn case from the start, and he operated merely from a sense of duty. He stated that in the removal of intra-ligamentous cyst the ureter is in great danger, and he believed that it had been repeatedly torn across without the knowledge of the surgeon. Dr. Goodell stated that before the death of this case, he had had in succession twenty-two successful cases, and afterwards a series of eight cases before the next death took place—viz., thirty-one cases with one death. The second death was due to obstruction of the bowels in a case of large fibroid of the womb and ovarian cysts weighing sixteen pounds. On account of the fibroid both ovaries were removed. He had had his share of cases of obstruction, but this was the first fatal one in his recollection. The remedies that he used were calomel and belladonna by the mouth, and turpentine by the rectum. The obstruction is due to the adhesion of a knuckle of intestine either to the stump of the pedicle, to the abdominal wound, or to some denuded surface. As soon as symptoms of obstruction presented themselves, he always aimed at once to open the bowels.

The third death occurred in a case of malignant cystic disease of both ovaries, in which the operation was incomplete. Malignancy had been suspected, but the operation was forced on him on account of the excessive pain from which the woman suffered. Yet he argued from his own experience and from that of Schroeder and Martin that, other things being equal, it was al-

ways wise to remove ovarian cysts even when malignant, for patient's lives would be greatly prolonged by the operation.

The right ovarian cyst had no pedicle, but ended in a brittle cancerous mass as large as his fist. This with very great difficulty was ligated *en masse*, and the bleeding vessels were secured separately. The left ovarian cyst was so fastened to the womb, pelvis, and broad ligament by masses of cancerous excrescences that he did not attempt to remove it. He would have abandoned the case after he had discovered the nature of the complications; but he had gone too far to recede, for his hand had been inside the of right cyst to break up its septa, and blood was flowing profusely from it. The lady died twenty-six hours later from shock and hemorrhage.

He stated that some ovariologists do not report their incomplete operations or their exploratory incisions, but that he thought it fairer to do so. If his memory served him no trick, this was the only incomplete operation for ovarian cyst that he had ever had. None of his cases had been selected, and he had refused to operate in one case only, and that one on account of epithelial cancer of the cervix; so that he did not have any exploratory incisions to report. He had twenty-one cases with adhesions—a very large proportion, which he attributed to the tendency women in this country have of postponing the day of operation. He also had had twenty cases of double ovariectomy; but this large number was due to his rule of removing the second ovary in all malignant or suspicious cases, in all cases which have passed the climacteric, in all cases of incipient disease, and always when asked by the patient to do so. He further stated that he still adhered to Listerism, and that he used Keith's dressing of one part carbolic acid to seven of glycerin.

DR. PARISH cited a few instances of evil results following abdominal tapping for purposes of diagnosis or for relief from distention. In his first ovariectomy cases, with the view of clinching the diagnosis, he aspirated and withdrew a few drachms of somewhat cloudy ovarian fluid. The patient presented some symptoms which in a few days became grave; pain in the tumor, rigors, rapid and feeble pulse, and high temperature. He operated during the existence of these symptoms, and found suppuration of the interior of the cyst and extensive anterior adhesions, both conditions doubtless dependent upon the aspiration; the patient recovered.

A few years ago, a well-known medical gentleman, of this city, aspirated a tumor supposed to be a multilocular ovarian cyst. Though the fluid was stated to verify the diagnosis, the patient miscarried in one or two days of twins at about the fifth month, and the tumor proved to be simply a uterus enlarged by reason of a multiple pregnancy.

He had recently seen in the Philadelphia Hospital a shocking case of labor, in which active labor pains began one week previous to her admission to the hospital. No urine had been voided for

several days. Pregnancy was denied by the patient and her friends, and was not recognized by two physicians. The woman was small and deformed, and in the abdomen were two fluctuating tumors, one due to a distended bladder, the other the uterus. Aspiration was resorted to in both tumors, a procedure that was not only unnecessary for diagnostic purposes in this case, but which would probably have been highly detrimental to the patient had not the neglected and protracted labor already determined a rapidly fatal result. Though tapping for relief, and especially for diagnosis, is less frequently resorted to than was the case a few years ago, yet even now it is too frequently done.

In reference to the development of cancer or sarcoma after the removal of seemingly benign ovarian tumors, he had seen recently an example in a patient operated on by Dr. Hickman and himself. A large cyst of one ovary and a small one of the other, both free from the appearance of malignancy, were removed, and the patient made a tardy recovery. In about a year, sarcomatous growths developed in the neck and axilla, and a large one in the abdominal wall of the left lumbar region. The patient died a few weeks ago, and the autopsy was made by Dr. Morris Longstreth, and though the sarcomas referred to were present, there was no intra-pelvic disease. An interesting feature was the total disappearance of the ligature of iron-dyed silk with which the pedicles and several vessels were secured about eighteen months previously.

DR. H. A. KELLY stated that, while simple tapping often was in no way injurious, it was also often productive of grave injury, and one of his own cases illustrated this point very well. The patient, having a cyst weighing one hundred pounds, was tapped in the left iliac region by a homeopathic surgeon. She had previously suffered from pressure symptoms. From now on she suffered from severe inflammatory pains around the puncture, and at the operation the extensive dense adhesions at this point constituted the chief difficulty. She is now well, more than a year since the operation.

It is a cause for mutual congratulations for American operators that their results are becoming so good. The whole credit of this lies in the thorough use of antiseptic agents, and the rendering the field of operation completely *aseptic*.

He believes, too, that our cases at home are more difficult than those now being operated on abroad. The tumors we operate upon are older, and with the increasing age of an ovarian tumor occur many changes detrimental to the patient: depression of vitality from pressure symptoms, diversion of so much albumin from the system at large, surcharge of the emunctories, as well as adhesions and unfavorable changes within the tumor itself.

Keith's dressing of a strong carbolized glycerin has rendered excellent results in Kelly's hands in at least twenty cases.

DR. GOODELL, in answer to a question by Dr. Baer, said he operated during menstruation merely from pressure of time on the part of the patient, and little or no effect was produced on the discharge by the operation.

DR. JOSEPH PRICE, in commenting upon some points alluded to in Dr. Goodell's paper, fearing the contaminated atmosphere of a general hospital, cited the statistics of two hospitals: Special De-

partment of Birmingham General Hospital and Birmingham Hospital for Women, covering a period from January, 1878, to September, 1885.

Special Department of General Hospital, ovariectomy, thirty-five cases, eleven deaths = 31.4 per cent.

Birmingham Hospital for Women, ovariectomy, 268 cases, 19 deaths = 7.1 per cent.

During the same period the total number of intra-abdominal operations in the Special Department of General Hospital, 85 cases, with 21 deaths = mortality, 24.7 per cent.

Birmingham Hospital for Women, 632 cases, with 49 deaths = mortality, 7.7 per cent.

One point as to the value of the spray, quoting from Keith's report of cases treated in the Royal Infirmary, Edinburgh.

Carbolic acid spray cases.

Ovariectomy, 21 cases, 18 cured, 3 died.

Hysterectomy for fibroid, 2 cases, 2 cured, none died.

Batley's operation, 1 case, none cured, 1 died.

Twenty-four cases with four deaths = 16.66 per cent.

Boro-glyceride spray cases.

Double ovariectomy with hysterectomy, 1 case, died.

Hysterectomy for fibroid, one case, recovered. Result with boro-glyceride spray; two cures, with one death.

No spray.

Ovariectomy, 47 cases, 46 cured, 1 died.

Hysterectomy for fibroid, 7 cases, 7 cured, none died.

Batley for fibroid, 1 case, 1 cured, none died.

Interstitial pregnancy, 1 case, 1 cured, none died.

Fifty-six cases, with one death.

Mr. Keith says: "No cases of serous cysts of the broad ligament were operated on. These all were treated by tapping, and none of them have returned." One such case that Dr. Price saw died a few days later. Of Dr. Keith's cases, one-half had no adhesions.

DR. MONTGOMERY expressed pleasure at hearing Dr. Goodell's details and success and considered his success gratifying, especially after tapping. A patient came to him one month after tapping. She had a high pulse, septicemia, large adhesions to viscera, etc., putrid clots in the tumor, and died on the fifth day with a temperature of 105°. He does not approve of tapping broad-ligament cysts. One patient with such a tumor was tapped seven times. He afterwards removed the tumor, and did not have a single vessel to tie. In this case the peritoneum had been pushed up by the tumor and was not opened until late in the operation.

DR. GOODELL made a few remarks on the subject of statistics. Dr. Keith's have improved, not because he has given up the spray, but because he has grown to his work. Dr. Goodell will give up the spray because it is an intolerable nuisance. As to the question of malignancy of ovarian tumors, it has been said that "all ovarian tumors are malignant and should be so treated." This is too sweeping; but the tumor should in all cases be removed as soon as possible, as soon as it is discovered.

DR. R. P. HARRIS desired Dr. Parish to report the present condition of the patient from whom he had removed the ovarian tumor exhibited by him before the society, at its meeting on March 4th, 1886, the day after the operation. Dr. Parish requested

Dr. Harris, who had seen her much more recently than he had, to report her condition. Dr. Harris stated that, notwithstanding the fact that the tumor was largely solid; that it had grown rapidly; that the solid portion had an appearance of malignancy, and that there was a small morbid growth projecting upward from the fundus uteri, the lady was to all appearance a well woman. He saw her on Dec. 26th, when she claimed to have perfectly recovered her health and strength after a very prolonged convalescence. Her appearance and activity certainly indicated that her statement was correct. The uterine nodule must have been a fibroid; as, had it been cancerous, it must have materially developed in nine months. The future of this case will be of much interest.

DR. CHAS. MEIGS WILSON reported

THREE SUCCESSFUL TAIT OPERATIONS.

These cases are the first of a series performed without the use of carbolic acid solutions for instruments, and without the spray. Hydrant-water boiled for six hours was used for the instruments, and sponges in the first and second cases, and a solution of mercuric chloride, 1 to 8,000, for like purposes in the third. The wounds in all three were dressed after the manner of Keith. The incisions were less than two inches in length. More than three months have elapsed since the operation in each case before it has been reported. It has seemed best to publish the cases in this manner, because the vast majority of all cases recover without accident from the operation and hence mere statistics of the healing of the wound amounts to little but evidence of individual skill. Statistics of the real relief afforded by the operation are what the profession need in order to give the operation its just place in modern surgical precedures.

Case 1st. Myo-fibroma of the uterus. This case first came under observation in July, 1886. She gave her history as follows: Mrs. W. McM., æt. 32, nullipara. For the last sixteen months has had a rapidly growing tumor of the abdomen, menses profuse, catamenial interval ten to fifteen days; for the past four months has been rarely free from bloody vaginal discharge. She was emaciated and anemic.

She was very nervous and alarmed about the constant bloody discharge. She had reflex pains, but no ovarian tenderness or pain. She was obstinately constipated, owing to the pressure of the tumor upon the rectum. She was found to have a large fibroid tumor of the fundus and anterior wall of the uterus. The enlarged uterus was incarcerated in the cavity of the pelvis and was very immobile. The sound entered the uterus $7\frac{1}{2}$ inches. Abdominal section was performed Sept. 20th, '86, with assistance of Dr. E. Wilson, C. P. Noble, E. Longaker. The tubes were as thick as the finger, they had thin walls, and were distended with blood. The ovaries were oversize and the right one was cystic. The ligature slipped from the uterine end of the left tube, and

before it could be secured there was free hemorrhage. The operation lasted forty minutes. Convalescence was retarded by abscess of one of the suture tracks. The patient made an excellent recovery. Present condition: Has lost no blood since the second day after the operation, appetite good and is able to resume her occupation of seamstress: frequently walks two miles to her work: all pain has disappeared; has gained twenty-two pounds since the operation. Dec. 20th, '86, the sound entered the uterus $3\frac{1}{4}$ inches: the tumor was greatly reduced in size.

Case 2d. Hystero-epilepsy. Mrs. C., æt. 30, primipara. Had always enjoyed good health until after the birth of her child six years ago. She had been delivered with forceps and the cervix and perineum had been badly torn. She was in bed nine weeks after the confinement. No clear history of her puerperal trouble could be obtained. She has had profuse catamenial discharges since. About six months after the birth of her child, she first commenced to have attacks of loss of consciousness, followed by epileptiform seizures at her menstrual periods. These gradually became so violent as to place her life in seeming jeopardy during their occurrence, and left her utterly prostrated. She had been in bed about twenty days out of every month for four years. Her epileptic seizures occurred only at her monthly periods. Everything that her medical attendant could think of had been done for her, and her family were about to place her in an insane asylum. The ovaries and tubes were removed Oct. 3d, 1886. The operation was an easy and simple one. The patient made a speedy recovery without any untoward symptoms. *Present condition:* she is now able to earn her living as a yarn-picker, working full time; has had no discharge of blood; little or no pain; and not one seizure since the day of operation.

Case 3d. Tubercular pyo-salpinx. Miss E. R., æt. 19, nullipara. This patient was also operated upon on Oct. 3d, '86. Since menstruation began, at fifteen years of age, she has had constant dull, aching pain, deep-seated in the pelvis. At her menstrual epochs "her agony has been unbearable." Menses have always been slight in quantity and regular as to time. She presented a badly nourished appearance. Physical examination showed marked evidence of general tuberculosis. In spite of this fact and in view of her intense menstrual pain, oöphorectomy was deemed justifiable and was accordingly done. Both tubes were as large as large bologna sausages and both ovaries were cystic. Tubes and ovaries were matted in a mass of adhesions which rendered the operation very tedious, it lasting one hour and ten minutes. Microscopic examination of sections of the tubes showed colonies of the bacillus tuberculosis. Both tubes were filled with a greenish pus which was very offensive. The recovery was complicated by an arthritis, the symptoms of which were so obscure as to render it difficult to say whether it was septic, rheumatoid, or

hysterical. She eventually made a good recovery. *Present condition:* her physician, Dr. Walter E. Bibby, of Kensington, Phila., reports, "she is entirely free from pain, able to walk about, and to attend to light household duties. Under the use of cod-liver oil and malt and alcohol, her tubercular trouble seems to be making little or no progress." As her peritoneum showed evidence of tuberculosis, as an experiment bichloride solution, 1 to 8,000, was used to wash out the abdominal cavity. Cases two and three were operated upon before Drs. A. W. Biddle, W. E. Bibby, W. C. Goodell, E. Wilson, Longaker, and C. P. Noble. All were done at the Phila. Lying-in Hospital. In each case the abdominal cavity was thoroughly flooded with boiled water before it was closed. The drainage-tube was not used. Uncarbolized Chinese silk ligatures and silk-wormgut sutures were used. No anodyne was given after the operation, and no food was given for thirty-six hours after operation.

DR. H. A. KELLY was particularly interested in the tuberculous tubes and regretted that an examination of the uterine discharges had not been made, as it would almost certainly have established the diagnosis. As to the right to operate upon a patient having a cavity in the lung, no general rule can be laid down; every such case stands by itself and much must be left to the judgment of the operator.

DR. BAER would hesitate for some time before operating in a case of general tuberculosis with a pulmonary cavity. He did not think tuberculosis could cause pyo-salpingitis.

DR. KELLY remarked that at least two cases have been observed here and many more abroad, and it has been recently formulated by Prof. Hegar among the tubal diseases which may require operation.

DR. PARISH thinks the general condition of the patient, outside of the pulmonary disease, would decide the question. Severe pain should be relieved unless the patient had a very short time to live.

HYDRO-SALPINX.

DR. H. A. KELLY exhibited the tubes of a patient who had suffered from metrorrhagia over thirteen years. She had been in five large hospitals in Philadelphia without relief, and had faithfully tried every plan of treatment, systemic and per vaginam. The diagnosis of enlarged tubes was made before operation, and on removal with their respective ovaries, the tubes were found, one as large as a bologna sausage, and the other a small sausage, with a limpid fluid. She has lost no blood since the metrostaxis following the operation about six weeks ago.

Dr. Kelly also exhibited fresh large cystic ovaries and tubes of a large fibro-cystic tumor upon which he had operated in the morning. The ovaries were sessile, surrounded by congeries of great dilated vessels. The operation was one of extreme difficulty. (*Note five days after operation, "the patient's condition is perfect."*)

The patient whose history was read at the preceding meeting, who had ovaries and tubes removed for chronic subinvolution and endometritis, was presented to the meeting. She has lost all pain and feels perfectly well for the first time in years. The uterus is normal.

DR. PARISH reported a Porro-Müller operation.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, November 5th, 1886.

DR. A. F. A. KING, *President, in the Chair.*

DR. CHARLES E. HAGNER reported a

CASE OF ALARMING SECONDARY HEMORRHAGE TWENTY-ONE DAYS AFTER DELIVERY.

On the 5th of July of this year (1886), I was called to attend Mrs. Blank in labor; two years ago I had delivered her of a dead child by the aid of the forceps, and also had to separate the placenta, as it was partly adherent, and she was flooding to such an extent from the exposed surface from which a partial separation had taken place. I had given, as has been a universal rule with me, as soon as the head was delivered, a full dose of Squibb's fld. ext. of ergot, and in delivering this placenta there was the dreaded hour-glass contraction, appearing as a second os about three or four inches above the os uteri, with the placenta in the section above this constriction. Whether the ergot had anything to do with this condition I do not pretend to say. She made a good recovery from this first labor, and was most anxious, as her approaching second labor came due, to have a living child. The cause of the death of the first child I could never determine, except a long time elapsing between the rupture of the amniotic sac and the delivery.

Her second labor progressed naturally until the head reached the inferior strait, where delay occurred, and the pains seemed to be fruitless, she at the same time getting very despondent and exhausted. The sac had been ruptured about an hour, and as the pains did not seem to be able to force the head down upon the perineum fully, I determined to use the forceps, which she had been begging for for some time; she gave the ether to herself, I simply putting it on a handkerchief.

There was no difficulty in the application of the forceps, and in a few minutes she was delivered of a fine living girl. She had the usual ergot as soon as possible. The placenta not coming away, I introduced my hand, and delivered it with little trouble, but again noticed a condition of hour-glass contraction. The placenta was rotated on the membranes, and they came away in a string-like mass, and it is absolutely certain all the placenta was removed at that time, for it was examined carefully. Mrs. B. did well, except that she complained constantly of a feeling of pain about half-way between the umbilicus and pubes, and the uterus seemed a little too much enlarged. I kept her in bed until the eleventh day, when she began sitting up in a chair or reclining on a lounge. Everything seemed to be going on well until the fourteenth day, when, in the afternoon, she was taken with quite a flooding. The flow up to that time had been normal. I saw her that evening, and ordered ergot every three or four hours, and lead and opium pills, as she complained again of the pain. At my visit, the flow had lessened very much, and she described her feelings before its appearance as those of fulness about the womb, and then this sudden gush of clotted and fluid blood with pain. I thought, from bodily exertion or relaxation of the womb, hemorrhage had taken place, until the cavity was filled, then contraction came on, and all was expelled. This was my reason for giving the ergot and opium. I kept the ergot up for several days, and the flow ceased almost entirely, thus making me think my diagnosis correct.

She continued to improve right along, looking and feeling much better, only sometimes complaining of this full feeling in the stomach, as she called it.

I saw her for the last time, as I supposed, on the twentieth day after her labor, and so informed her; but the very next afternoon, about 5 o'clock, the twenty-first day, a message came—she was dying from hemorrhage. I made all haste to see her, and I have never seen a poor woman in a sorrier plight.

In the middle of a large spring mattress, sunk down from her weight, and in a pool of blood up almost to the top of her thighs; she could hardly articulate, and was perfectly blanched, and with hardly any pulse at the wrist. I confess it was most alarming. I immediately gave stimulants, then examined the uterus, found it not larger than before; but the blood flowing still, I introduced a speculum. Having moved her to the edge of the bed, and gotten her out of the pool of blood she was in, I could see the blood pouring out of the os, which did not seem much enlarged or open to any extent. I wrapped an applicator with cotton, and applied as thoroughly as I could the sol. of perchloride of iron to the interior of the womb, then tamponed her with cotton pledgets as tightly as possible. This I thought the only way to be absolutely sure she would not bleed again during the night, and I saw that

the loss of much more blood must be fatal. Being three weeks after labor, I did not think the womb would distend enough to be dangerous. I also continued the use of ergot and brandy, and had the foot of the bed raised on the seat of a chair. This made her get more like herself, and brought back the voice in an hour or two. She bled no more that night, and the next morning I removed the tampon. The os uteri was found open, and my finger felt a foreign substance within its cavity. By making external pressure, I could press the womb down, and then could feel a globular mass within it. By the aid of a pair of bullet forceps and my finger, I succeeded in extracting it. It was pear-shaped and as large as an orange, looked glazed on the surface, and fleshy, not like placental tissue, but more like a fibrinous cast of the interior of the uterus, composed of blood clots with the serum squeezed out, which I am inclined to think it was; also that it had been there ever since delivery, growing in the pocket above the hour-glass contraction of the uterus: for, after its delivery, she never again complained of that pain and feeling of fulness and distention, which had been such a constant symptom before. After its removal, I again used the iron locally, and she never had another bad symptom. I forgot to state that the secretion of milk failed entirely, and she has menstruated in September and October naturally. One strange thing in her family history is that her mother and one aunt died of hemorrhage from intrauterine polypi.

Such is the clinical history of a case that for a time caused me much anxiety, and I hope may be useful in its lessons. The interesting points are: Could there be any way of preventing such a condition? Was the ergot a factor, and what was the foreign body—an organized clot, polypus, or, perhaps, even a placenta succenturia? I regret very much that during the excitement some of the attendants immediately carried off the vessel containing the mass, and emptied it into the closet, so that no proper examination could be made. Just looking at it for a few minutes, it presented the appearance of a fleshy mass with a glazed surface, not unlike a miscarriage of three months.

DR. GEORGE WYTHE COOK said the interesting case detailed by Dr. Hagner is of a class that is fortunately of rare occurrence. Nothing is more fearful than to have to deal with profuse hemorrhage in the parturient woman, but to encounter it *three weeks* after delivery is simply appalling. The question might be asked, as to what the ergot had to do with producing the hour-glass contraction, which occurs as often without as with the ergot. The interesting part of the case lies in the direction of the cause of the late hemorrhage, and the foreign substance expelled from the womb. There can be no question but that the latter was the exciting cause of the flooding, but it is difficult to understand why it should have produced so little disturbance before it was finally expelled with the profuse hemorrhage, except on the ground of the exceeding *tolerance* of the uterus. With due deference to the opinion of Dr. Hagner, he was inclined to think that the foreign

body was a portion of retained placenta, and as Dr. Hagner examined the secundines carefully and felt sure they were entirely removed, it is probable that an adventitious lobe or cotyledon had an attachment away from the bulk of the placenta and was not expelled with it. This seems the more probable as there was hour-glass contraction, and it is not unreasonable to suppose that this separate lobe was situated in that part of the womb which did not contract. Here it remained occluding the underlying vessels, but as involution progressed it became detached and hemorrhage ensued.

DR. S. C. BUSEY thought the history of the case was not completely enough reported for us to study it. Was the lady up and about and taking exercise the day before the hemorrhage? Was she up between the first and second hemorrhages? Dr. Hagner had not stated how far involution had progressed, nor was the statement of her general condition full enough for us to judge of this. The lochial discharge had continued to the fourteenth day, and then a hemorrhage, after which all flow ceased. She improved up to the twenty-first day, when there was an alarming flooding. The treatment consisted of applications of the perchloride of iron and the vaginal tampon. On removing the tampon a *fibrinous*-looking body, the size of an orange and the shape of a pear, was discovered and removed. This description leads us to suppose that it was, as Dr. Cook has said, a part of the secundines, probably a *placenta succenturia*. Hemorrhages so long after delivery are usually due to retention of some portion of the secundines. There might have been deficient contractility, or subinvolution. Her family history might be an important element—there were histories of uterine polypi in several members of her family. She seemed almost to have been a bleeder, so profuse were the hemorrhages. Constipation or diarrhea even might have been a cause. Undoubtedly, however, the trouble was from a piece of retained secundines. In abortions, retained portions of the placenta are the most frequent cause of secondary hemorrhages.

THE PRESIDENT questioned whether the ergot produced hour-glass contraction if given in moderate doses. Lusk and others advise against the use of ergot until the secundines have come away. He had used ergot both before and immediately after birth of the child, and has had but one case of hour-glass uterus, and this because there were morbid adhesions of the placenta. He does not think ergot will produce this condition if Credé's method be practised in addition. The cases of Doctors Hagner and Busey teach us that the uterus should always be searched when there is hemorrhage. He thought Dr. Hagner ought to have explored the womb after the first hemorrhage. It had not been said whether endometritis was present or not. This might have been the cause of the hour-glass contraction.

Evidently the foreign body was a bit of morbidly adherent placenta or placenta succenturia, as has been said, for the ergot could not have begun to act before the secundines were delivered.

DR. BUSEY said his usual custom was to administer ergot as soon as the head was born. In the one case of hour-glass contraction which he had had, the ergot had been held responsible for the condition. He had given ergot as soon as the child was born. He waited a half-hour and no placenta came away. On examination he found the constriction, and extracted the placenta.

DR. S. S. ADAMS remarked that it was his custom to give ergot as soon as the head was born, as recommended by Fordyce Barker. He then follows the uterus down and holds it.

DR. T. C. SMITH thought that ether and ergot were both elements of trouble, the former being a frequent cause of post-partum hemorrhage. In Dr. Hagner's case, the rapid removal of the placenta, before the woman had recovered from ether, relaxed the uterus so that it could not expel the clots, while the action of the ergot, in producing hour-glass contraction, prevented their subsequent escape. He thought the foreign body was a clot which had been there from the first. When an anesthetic is given, the placenta should not be removed until the woman has fully recovered consciousness.

DR. C. E. HAGNER, in closing the discussion, said he agreed with the gentlemen who had spoken concerning the use of ergot. He had never regretted using it. He had never had a fatal case of post-partum hemorrhage or even a very bad genuine post-partum flooding. One explanation of the foreign body is that a clot formed in the upper segment of the hour-glass uterus after the birth of the child. As involution went on, this clot was forced downwards. He was certain that no part of the original secundines remained in the uterus, as he had been especially careful in examining them, being warned by his previous experience with the patient. It might have been a *placenta succenturia*, however.

There had been symptoms of malaria both before and following the labor, and as the hemorrhages occurred on the fourteenth and twenty-first days, it looked as if malaria might have been a factor. He had noticed that malaria was apt to follow in a case in which there had been much hemorrhage.

The lady had been kept in bed eleven days succeeding labor, and had not been outside her room at the twenty-first day.

The size of the uterus all along seemed about normal, and he could not agree with the President that exploration was called for even after the first hemorrhage, which had not been profuse and had ceased before his arrival at her house.

Opium and ergot he thought were all that was required, and they had been given her.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, December 17th, 1886.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. HENRY T. BYFORD exhibited the following specimens:

PROLIFERATING OVARIAN CYSTOMA.

This specimen, removed three weeks ago by Dr. William H. Byford at the Woman's Hospital, is interesting in being a large ovarian cystoma, composed of an immense number of small cysts. Extremely formidable in appearance—resembling a malignant growth—it has pursued an exceedingly benign course. Adhesions

were few and easily severed. The subsequent recovery was typical, one dose of morphine constituting the entire medication.

PAROVARIAN CYST AND APPENDAGES, COMPLICATED BY A UTERINE FIBROID.

This cyst, which was about the size of the head of a child two years old, developed between the layers of the broad ligament in a direction away from the uterus, lifting up the Fallopian tube, ovary, and infundibulo-pelvic ligament. The tube is straightened and hypertrophied, admitting the finger for an inch into the fimbriated extremity, and the infundibulo-pelvic ligament is separated from its ordinary pelvic wall attachment by a larger portion of the tumor, over and under which the peritoneum passes to form, with the ovarian ligament and uterine end of the Fallopian tube, the pedicle. Had there been no pedicle, or had it been desirable to leave the ovaries, the inner coating of the cysts could have been taken out of the serous investment in about two minutes, without violence or hemorrhage. You will observe that I separate them now almost as easily as if they were wet pieces of linen lying in apposition. The ovary is slightly hypertrophied. On account of the presence of a uterine fibroid tumor, the size of an orange, the other healthy ovary and tube were removed. Three transparent cysts about the size of beans, and feeling as hard as bone or wood, are, as you see, hanging by long pedicles from the meso-salpinx. The ovarian artery runs over the tumor and under the tube, is elongated and four or five times its normal thickness. Here is also the left tube. It is congested, but neither it nor the artery is appreciably enlarged. The ovary is large but not pathological.

OVARIAN CYST IN THE BROAD LIGAMENT CONTAINING THE DEGENERATED OVARY.

This tumor, which I removed by enucleation and which was the size of a pregnant uterus in the sixth month, is interesting by comparison with the other, and also as illustrating the dangers of tapping. It evidently developed from the surface of the ovary between the layers of the broad ligament towards the uterus. The remainder of the ovary has developed into a multilocular cystoma the size and shape of a large orange, and projects into the large cyst. The firmness of the adhesions of this inner coat of the tumor to its peritoneal covering, as compared with the smaller cyst just shown, suggests that small tumors are more easily enucleated than large ones, and constitutes an argument in favor of earlier operations. The horn of the uterus with the Fallopian tube was hypertrophied and drawn up over the anterior surface of the tumor, so that, when exposed during the operation, it looked like a pregnant uterus with a large vein running over it diagonally across the incision. Had the tumor been tapped in

the ordinary place, trouble must have resulted, and the operation which, after the stripping off of this hypertrophied and congested uterine tissue from the tumor, was easily and rapidly completed, would have been complicated. The uterus in a few weeks was apparently normal in size, position, and mobility. It is interesting to note that the tumor was mistaken for advanced pregnancy, about a year since, by one of our most prominent general practitioners.

SUPPURATING OVARIAN ADENOMA, WITH UTERUS—AUTOPSY.

This tumor, which was examined for me by Dr. F. S. Johnson, is an ovarian adenoma of the same histological nature as the first specimen shown, but presents a striking contrast by malignant course and small size, as the whole was scarcely larger than a child's head. An ovarian tumor was removed from the opposite side by Dr. William H. Byford several years ago. As this was not a malignant growth, although practically pursuing the course of one, an attempt was also made by him to remove this, or at least cure the discharging abscess that surrounded it, about five months before the patient's death, but it was, from the nature of the case, only partially successful. In attempting its removal after death, I was almost equally unsuccessful, for it was surrounded and intermingled with pus cavities and intestinal loops, and had destroyed and occupied the place of all the pelvic tissues except the rectum, bladder, and uterus with the right round ligament which you see hanging to it. The cul-de-sac was full of it, the posterior uterine surface inseparable from it, the right broad ligament supplanted by it, and the contents of the left broad ligament an agglomerated mass of inflammatory tissue. A blue walled abscess about the size of, and extending along the course of, the ascending colon, had secured an outlet just below the border of the ribs. Another abscess opening just below and to the right of the umbilicus gave exit to pus, feces, and a semi-transparent jelly-like ovarian fluid. The right ureter was dilated and hypertrophied. The pelvis of the kidney must also have been dilated, although that, being left to be examined last,¹ was finally forgotten. The lower three feet of the ileum were compressed and atrophied to the size of a small lead pencil. Just above it ran a fibrous tube of the usual size of the ileum, straight from the cecum to the lower opening in the skin. The uterus, which previous to the removal of the first tumor had developed two healthy children, was of rather small size, in a normal position and healthy, excepting a moderate laceration of the cervix and a slight degree of injection of the mucous membrane about the os.

¹ The autopsy was performed in the midnight before the burial, and in a small town, in a cold room, and without conveniences.

**FIBRO-SARCOMA OF THE LEFT HORN OF THE UTERUS, LUNGS, PLEURA,
PERICARDIUM, RECTUM, TRANSVERSE AND DESCENDING COLON, AND
ABDOMINAL PARIETES.**

About a quart of serum was found in the right pleural cavity. Several round, fibro-sarcomatous tumors, the size of nuts, and several indefinite spots of contracted fibrous tissue, were found in the lungs, suspending their expansibility except over a few small areas. The two which I hold in my hand were torn from the lungs; one from the centre of the apex and the other from the pleura at the base. A fibro-sarcoma, the size of a goose's egg, which is, as you see, still attached to the left pleura, was also attached to the pericardium. The heart weighed eight and three-quarter ounces, was drawn to the left by the contracted lung (which had but little fluid about it) and contained an ante-mortem clot. The liver was enlarged and mottled. The stomach lay entirely to the left side, in front of the compressed and atrophied spleen, with the pyloric orifice suspended vertically under the cardiac orifice, and not reaching as far to the right as the median line. The transverse and descending meso-colon was strung with these fibro-sarcomatous masses, the size of hazelnuts, and the rectum covered with the same of a little larger size. A few were also found on the peritoneal surface of the abdominal parietes. The uterine tumor weighed twenty ounces, and, like all of the specimens, cannot be distinguished from fibroid or fibrous tumors by the eye, except over a limited area upon the anterior surface, where it has softened and degenerated into the round-celled variety. The fact that the patient was twice tapped by physicians for ovarian cystoma makes it seem probable to me that this change has been produced by the introduction of the trocar, and that the little tumors on the abdominal parietes were due to the adhesions forming afterwards. The fluid obtained then was probably peritoneal, which, to the amount of about eight pints, had again accumulated. It was dark green in color. Abdominal enlargement was noticed several years ago. An operation had been advised two years ago. Dr. F. S. Johnson examined the specimens, with the result mentioned, and but for an attack of sickness would have reported upon them in person.

DR. W. W. JAGGARD exhibited the following specimens:

**UNILOCULAR CYST OF RIGHT OVARY, THE OVARIAN TISSUE SHOWING
CORPUS LUTEUM OF MENSTRUATION.**

He had recently removed the tumor, and the patient had made an excellent recovery. Menstruation ceased three days before the operation. The specimen was interesting, though not exceptional, in showing the persistence of functional activity in such an extensively diseased organ. The left ovary was normal, and was not removed.

A PLACENTA, SHOWING VELAMENTOUS INSERTION OF THE UMBILICAL CORD, AND REMAINS OF AN EXTENSIVE HEMORRHAGE INTO THE PARENCHYMA OF THE ORGAN.

The term *insertio velamentosa* means a separation of the three vessels of the cord before they reached the placenta. The vessels pursue a straggling course between chorion and amnion, for a variable distance, and each one reaches the placental margin by itself.

According to B. Schultze (*Jenaische Z. f. Med. u. Naturw.*, 1867, Heft 2 and 3) the origin of velamentous insertion of the umbilical cord is as follows: The allantois carries the fetal vessels to the periphery of the egg, entirely irrespective of the future placental site. Indeed, it is comparatively seldom that the future placental site is immediately reached. The vessels penetrate all the chorionic villi indiscriminately. These vessels are subsequently obliterated in the chorionic villi not destined to form the placenta, and vascular connection only remains with that portion of the chorionic villi corresponding to the decidua serotina. With the further growth of the egg, under normal conditions—it makes no difference what point in the egg periphery the allantois originally touched—as the amniotic sheath forms around the rudimentary cord, the fetus performs a movement of rotation, so that the vessels pursue a straight course to the placenta. Now this movement of rotation may be hindered, and the formation of a complete sheath prevented by anomalous adhesions. The hindrance is adhesions of the umbilical vesicle, the ductus, or the vessels to the amnion or chorion. In such cases, if the growth of the ductus does not keep equal pace with that of the amnion, a complete sheath cannot be formed, and the amnion forsakes the vessels before they reach the placental edge. Velamentous insertion of the cord can occur at the pole of the egg opposite to the placenta or at any intermediate point. The anomaly is observed most frequently in cases of multiple pregnancy.

Velamentous insertion of the umbilical cord seldom leads directly to interference with the development of the fetus. In labor, however, the vessels may be compressed between the presenting part and the parturient passages, and the child may be asphyxiated, or, with the rupture of the bags of waters, a vessel may be torn and the child's life endangered by loss of blood. In general terms, the clinical picture bears a great resemblance to placenta previa.

In the specimen presented, the cord is inserted into the chorion about five centimetres from the placental edge. The anomaly was not recognized until near the conclusion of the first stage of labor. A large vessel was torn at the same time with the spontaneous rupture of the bag of waters, and the life of the child was seriously jeopardized by the loss of blood.

The child, though probably mature in point of age, was small

and feeble; weight, 2,700 grams; length, 47 centimetres. The failure in development could be ascribed to the large hematoma and numerous hemorrhagic infarctions in the placenta fetalis. The mother of the child was threatened with abortion, and suffered from uterine hemorrhage when she was in the sixth month of pregnancy. The child, at the time of presentation of specimen, was living.

DR. J. H. ETHERIDGE made the following remarks upon

A CASE OF ANTERIOR VAGINAL ENTEROCELE,

with exhibition of patient.

I have a rare case that I would like to exhibit to the Society, one of anterior vaginal enterocele. I have had a few of my medical friends examine it, and they all concur in saying that they have never seen a case like it. The patient is 19 or 20 years of age and has one child, 11 months old. When she was about six months gone in pregnancy, she "jumped the rope" one day and after that felt something come down through the vagina. She went to full term and had a normal labor. Whenever she strains or lifts, the enterocele comes down, presses the vulva apart and comes out between the thighs. On examination I find quite a large opening in the roof of the vagina. The edges of the ring can be very easily outlined with the finger, and when the hernia is down the finger in the vagina is at once attracted by a pendant mass, and by pressing it a little one can determine that it is filled with gas. The opening comes down to the left of the uterus, anterior to the broad ligament, posterior and to the left of the bladder.

A Fowler pessary has been fitted which seems to answer the purpose of complete retention, and as long as the patient can avoid an operation my advice is not to have one. The uterus is in good position. She made a good recovery from her confinement and is nursing her child, and seems to be in a perfect physiological condition. The question of operative procedure for a radical cure is a very serious one for this patient. Laparotomy is full of difficulty in attempting to close the hernial opening from within, is of a most unsatisfactory possibility in its outcome, and is followed by the very great risk to life which attends all abdominal sections. Any operation through the vaginal tract will be attended by such a lack of certainty in results as to cause me to hesitate in essaying it. Until it is found impossible to retain the intestine in its proper place with a pessary, I have advised the patient to avoid submitting to any surgical proceeding. The patient is present, and each gentleman desiring to do so can make the examination and verify what I have said.

DISCUSSION.

DR. PHILIP ADOLPHUS.—The case just presented for examination by Dr. Etheridge is a typical case of vaginal hernia, the intestine

passing between the loosely attached connective tissue which unites the bladder and anterior wall of the vagina, in its upper half. This mode of descent is much more infrequent than a hernia into the *cul-de-sac* of Douglas. In the case here presented, the hernia is reducible in the upright position, contains intestine only, and has for its covering the peritoneum and vaginal wall. What can be done for this patient's relief? These herniæ seldom become strangulated. During labor, however, besides being an obstacle to prompt delivery, they are liable to contusion and strangulation. No retentive apparatus is worthy of trial, for all distend the vagina and ultimately increase the evil. What surgical procedure should be attempted? The text-books to which I have access do not suggest anything. Is the hernia to be closed by way of abdominal section or per vaginam? I think that the closure per vaginam is preferable, and I suggest the following procedure, adapted from Stoltz's operation for cystocele: "The patient being placed in Simon's position with the perineum retracted, the hernia is to be reduced and kept in place by means of armed probangs. An incision to be made over the tumor, the tissues divided until the ring of the hernia is exposed. This ring is to be surrounded by a running ligature of very heavy catgut, and then closely approximated, tied, and the ends cut off short, or, if thought preferable, interrupted catgut sutures may be introduced to effect the same purpose. This completes the first step of the operation. Then remove a piece of the vagina larger than the protruded tumor, over the region of the hernia. The wound may be closed by running a circular single ligature of carbolized silk in and out, about an eighth of an inch from the margin of the wound, all around it, the end of the ligature being brought out close to the place where it was first inserted. The two ends are then drawn tight and tied, leaving a puckered opening into which a little drainage tube may be inserted. During the introduction and the tightening of the ligature, the intestine may be held back by armed probangs. It is easier to work in this region with the scissors than the knife. Great care should be practised in operating in this neighborhood not to wound the uterus and the peritoneum, which can be avoided by elevating the mucous membrane as it is removed. Now a few words in regard to the abdominal section for reducible vaginal enterocele. After having opened the abdominal cavity and withdrawn the prolapsed portion of the intestine, will it be easier to close the hernial aperture than per vaginam? I think not. The peritoneum and cellular tissue beneath it (abundantly supplied with lymphatics and blood-vessels, the parametric tissue of Virchow and Spiegelberg) will have to be incised, the bladder and upper portion of the vagina separated, the redundant tissue of the anterior wall of the vagina drawn up and excised, then stitched and replaced; the peritoneum also closed below as well as externally in the abdominal parietes. Will this render the site of the hernial protrusion stronger? Will it be a safer and more efficient operation than the first? I think not.

DR. H. T. BYFORD.—Dr. Etheridge has shown us one of those rare and interesting cases of anterior vaginal enterocele. The protrusion is through the parametrium in front and to the left of the cervix, the entire uterus being pushed backward, and the bladder forward. The left ureter can be felt passing from the trigone in front of the tumor downward and to the left of it. The

broad ligament is pushed backward, and the round ligament outward toward her left side. The parts to the left of the median line seem only slightly to participate in the general displacement. The remedy for this condition, of course, must be to get the displaced organs and tissues back into the place now occupied by the intestine. I think Dr. Etheridge was wise in rejecting abdominal section as a remedy, for no advantage could be derived from it that would compensate for the risk involved. An operation from the vagina that would be justifiably performed upon a girl of her age could not be expected to be permanently successful, as the parts could not be properly replaced, and vaginal support could only be given. The treatment by pessary, already adopted in this case, is better than either of these procedures, because it acts partly by replacing the organs, especially the uterus, and partly by providing a barrier to the descent of the enterocele. Its weakness is that it does not tend to strengthen the parts upon it, and that it weakens those under it. The most efficient and rational method of permanently replacing the parts, and thus curing the enterocele, would be to perform Alexander's operation of shortening the round ligaments. This would draw the fundus forward over the bladder and thus replace the normal central barrier to the descent of the intestines. It would also draw the round ligament and upper portion of the broad ligament forward to form a lateral support to them. By turning back the base of the broad ligament it would tend to draw back into position the ureter which is in close relation with its posterior edge, and at the same time the connective tissue through which the ureter runs and which is displaced forward with it. I know of no other method by which the parts could be brought back so nearly to their former relations. A pessary could then be worn until the parts had contracted and regained tonicity. If then the anterior vaginal wall remained redundant, a circular piece should be excised in front of the cervix and by a stitch passed around it drawn together, along with the parametric tissue immediately above it.

DR. ETHERIDGE.—If Alexander's operation was satisfactorily performed, what would be the effect upon the bladder and upon subsequent pregnancy?

DR. BYFORD.—After the operation, the fundus is not, or should not be, held down upon the bladder as firmly as in some cases of antelexion, in which there are no bladder symptoms of any account. I have performed three operations. In one case the bladder symptoms were benefited, in the others there were none complained of, either before or afterward. As to pregnancy, already there is some experience to show that it does not interfere. The round ligaments are not elongated in pregnancy as much as would be supposed, since the uterus grows to a certain extent away from them. In many cases of antelexion or anteversion, the ligaments are shorter than after an Alexander operation, yet give rise to no serious trouble in pregnancy.

DR. ADOLPHUS.—How could Alexander's operation be of benefit if it draws the fundus down and the cervix up, since the enterocele is between the bladder and the cervix?

DR. BYFORD.—It draws the body of the uterus down under the intestines, displacing them upward. The cervix needs to be held upward and backward in order to secure a proper relation of parts.

ETIOLOGY, PATHOLOGY, AND CLASSIFICATION OF SALPINGITIS.

The Secretary, Dr. Edward Warren Sawyer, read the following communication from M. SÄNGER, M.D., of Leipsic, in reply to a letter by Mr. Lawson Tait, read before the Society, May 28th, 1886. .

LEIPSIC, October 10th, 1886, Lindenstrasse 16.

To Daniel T. Nelson, M.D., President of the Chicago Gynecological Society.

DEAR SIR:—I have been personally attacked by Mr. Lawson Tait in a letter addressed to you; as I desire that my reply should go by the same way, I take the liberty of requesting you to bring my letter to the notice of your Society and to have it assigned a place in the Transactions of the same. Nobody will dispute that up to the present time Mr. Lawson Tait, of all laparotomists, has had the best results, at all events in regard to ovariectomy and salpingo-oöphorectomy. His practical results have, however, raised his conceit to so high a degree that in pathological questions also he assumes a certain infallibility, which vents itself in numerous sallies and attacks upon others. The consequence of this is that just at present, Mr. Lawson Tait is being subjected to various energetic criticisms as by Bigelow, Schröder, and others.

Now Mr. Lawson Tait has also shot one of his shafts at me. I feel very thankful toward Dr. Christian Fenger for having received it on my account. However, I do not wish to allow the matter to rest there.

At the sessions of the Gynecological Society of Chicago, held in February and March, the treatment of pelvic abscess by laparotomy was discussed in a highly instructive manner. Dr. Fenger, in his excellent and exhaustive remarks, said that "my statements regarding etiology were the most complete," inasmuch as there must necessarily be as many forms of pelvic abscess as there are forms of disease of the Fallopian tubes. The latter were enumerated by Dr. Fenger according to the classification given by me in a paper read at the *Versammlung Deutscher Naturforscher* in Magdeburg. (See report, *Archiv f. Gynaek.*, Bd. XXV., pp. 126-33.) In this classification six different forms are recognized, and it is this distinction which Lawson Tait is pleased to style "absurd." Although Dr. Fenger reiterated his statement "that he regarded my classification as correct and complete and in accordance with the laws governing inflammatory processes in all organs of the body," yet I do not think that this defence of my position is sufficient. Considering the great influence Lawson Tait exercises upon the profession, I deem it my duty to refute him in every particular. I shall attempt to do so in a scientific manner, and I may thus hope that my reply will prove of general use and interest.

The pathological anatomy and the course of salpingitis can be

understood only when we bear in mind the theories of infection. The whole sexual tract, from the ring of the hymen to the ostium tubæ abdominale, is open to the entrance of the external air and the germs suspended in it. Carriers of infection coming from the abdominal cavity and its contained organs may also enter at the ostium tubæ abdominale. Even microbes originally lodged in the external parts, in the vagina around the cervix, may, by way of the lymphatics, reach the peritoneal cavity, and thence gain entrance into the tubes.

The normal vaginal and uterine secretions at the age of puberty and the menstrual blood contain numerous non-pathogenous micro-organisms. Still greater numbers are found in the catarrhal secretions of the uterus in cases of endometritis, as was demonstrated by Küstner. As to the normal tubal secretion and the tubal secretion in cases of salpingitis catarrhalis, consequent upon endometritis catarrhalis, no investigations have as yet been made to show whether or not they, likewise, contain non-pathogenous microbes. However, as the secretion of an endometritis contains microbes, we may assume that, if the inflammation is continued into the tubes, its secretion will here likewise contain the same. It has been clearly proven that pathogenous micro-organisms pass from the external parts to the tubes and the peritoneal cavity—a fact which is doubted by no one, perhaps, except by Lawson Tait. These organisms have in part been accurately studied and it is well known that different kinds produce distinct forms of salpingitis, and secondarily pelveo-peritonitis. The fact was already established by Guérin and Guerrier that, in making vaginal and intrauterine injections, air, and thus also micro-organisms, might pass into the tubes (physo-salpinx). S. Hennig, in his book "*Krankheiten der Eileiter*," p. 52, surmises that, in cases of putrid endometritis and physometra, gases may escape from the tubes into the peritoneal cavity.

Our present knowledge of the above-mentioned pathogenous micro-organisms will enable us to divide them into three groups:

GROUP I.—FORMS OF SALPINGITIS PRODUCED BY KNOWN SPECIFIC MICROBES.

1. *Salpingitis gonorrhoeica*, produced by the gonococcus of Neisser.
2. *Salpingitis tuberculosa*, produced by the bacillus tuberculosis of Koch.
3. *Salpingitis actinomycotica*, produced by the *actinomyces bovis* of Bollinger.

1. *Salpingitis gonorrhoeica* is the only specific infectious form of salpingitis which is recognized as such by Lawson Tait, although he stops short of admitting that the gonococcus is the exciting agent. Without doubt the gonorrheal is the form most frequently met with. This fact was clinically established as early

as 1872 by Noeggerath, long before Neisser had discovered his gonococci or Lawson Tait had performed his first operations "for suppuration of the uterine appendages." In Germany, I myself was one of the first gynecologists who at our meetings showed the frequency of gonorrheal salpingitis, emphasized its causal connection with pelveo-peritonitis, and removed by operation the gravely implicated uterine adnexa. (Magdeburg, 1884, and Munich, 1886.) Gonorrheal salpingitis is never followed by a destructive "suppuration" of the uterine appendages: it remains invariably a disease of the surfaces of the mucous and serous membranes. The pus formed by the specifically diseased mucous membrane gradually distends the tube; in one class of cases where there is a great accumulation of free pus the tube is transformed into a large sac with thin walls; in another, where the wall of the tube, especially its muscular tissue, is hypertrophied to a greater extent, the tube becomes much thickened and rigid. In most cases, both conditions are found, the uterine portion of the tube is thickened, the abdominal end dilated. The serous surfaces of the tubes, the albuginea of the ovaries, the serosa of the peritoneum are attacked or become pus-secreting surfaces only in cases where gonorrheal pus has escaped from the tubes, and thus infected the above-named structures. We may then have peri-salpingitis, peri-oöphoritis, perimetritis, or pelveo-peritonitis purulenta gonorrhoeica. I do not believe that gonorrheal pus ever penetrates the walls of the tubes, and thus produces these diseases. But a specific gonorrheal inflammation of the mucous membrane of the tube, with secretion of pus into the cavity of the latter, is accompanied by a non-specific inflammation of the entire tubal wall. This may also excite peri-salpingitis, peri-oöphoritis, and so forth; the organs involved may become adherent to each other and displaced, but we never meet with a purulent exudate of the same nature as that found in the cavity of the tube itself. This also explains why, in some instances, gonorrheal disease of the uterine appendages is accompanied by severe and violent symptoms, frequently resembling those of a peritonitis following perforation, whereas in other instances it develops insidiously, scarcely manifesting any symptoms at all. In the former cases, gonorrheal pus escapes through the ostium abdominale into the peritoneal cavity; in the latter, the inflammation of the external surfaces of the adnexa is non-specific in character.

According to what I have just stated, I must necessarily regard the terms "suppuration of the uterine appendices and peri-uterine or pelvic abscess" as inaccurate, and from a general pathological point of view as productive of confusion; we invariably find free pus in the tubes and peritoneal cavity or an inflammation of the adnexa, but never destructive suppuration of the tissues of the pelvic organs. In cases in which abscesses are discovered in the walls of the tubes, in the tissues of the ligamenta lata, and in the

ovaries, these abscesses are, as I shall later on show, due to septic infection, but not to gonorrhea. The latter disease produces supuration only on surfaces.

I purposely enlarged somewhat on gonorrheal salpingitis and its consequences, as this form presents a typical example of infectious salpingitis in general.

There is one more point to which I wish to call attention. Gonococci have not always been discovered in pus coming from the tubes in cases in which clinically there existed no doubt as to the gonorrheal nature of the infection. The conditions under which the gonococci are destroyed, or prevented from further development, have not yet been ascertained; further investigation will also have to show whether, in cases in which gonococci are absent, there are not present other microbes belonging to one of the groups mentioned further on.

2. *Salpingitis tuberculosa*.—Alfred Hegar's lately published work, "Entstehung, Diagnose und Chirurgische Behandlung der Genitaltuberculose des Weibes," relieves me of the necessity of entering more fully into the consideration of this form of salpingitis. Lawson Tait denies the existence of this form, or rather, he admits it, but only "for the third and contracting stage of pyo-salpinx." This admission simply discloses his ignorance of the true nature of tuberculous infection. The pus in a case of purulent salpingitis, whether it be gonorrheal or otherwise, may of course undergo caseation. This was called tuberculization before Koch's discovery of the bacillus tuberculosis; now it is termed coagulation-necrosis, according to Cohnheim-Weigert. It is this which Lawson Tait confounds with the genuine infection by the bacillus of tuberculosis.

A pyo-salpinx may remain in this third stage indefinitely: a tuberculous salpingitis will never result therefrom unless there be added a tuberculous infection.

3. *Salpingitis actinomycotica*.—This form is called by Lawson Tait "an equally ridiculous subdivision based on mere theory, not on fact." It seems to me, before making such an unintelligible assertion, it would have been his duty to inquire whether there really is no case on record to support me in including this form in my enumeration. In my paper above-mentioned, I named the author who had furnished this case; I will now accurately give my authority: Adolph Zemann, "Ueber die Aktinomykose des Bauchfells und der Baueingeweide beim Menschen," *Medicin. Jahrbücher der K. K. Gesellsch. der Aerzte in Wien*, 1883, p. 477. Case 4. The tubes in this case were dilated and filled with pus and clumps of the actinomyces, their walls were thickened, and exhibited numerous granulations produced by the fungus. The fungus had migrated either from the vagina or from the intestines, which were found extensively adherent to the tubes. (Was Lawson Tait nicht kennt, existirt für ihn nicht.) What Lawson

Tait does not know has no existence for him. "Germanica sunt, non leguntur."

GROUP II.—FORMS OF SALPINGITIS DUE TO SPECIFIC MICROBES IDENTICAL WITH THOSE PRODUCING TRAUMATIC INFECTION.

Salpingitis septica (pyemica, ichorosa, purulenta, diphtheritica).—The term *salpingitis septica* is rather general and inaccurate; as when speaking of a pyo-salpinx, we simply mean that the tube contains pus, when employing the term *salpingitis septica* we merely indicate that the disease is due to infection by a septic virus. It is at the present time a matter of extreme difficulty to diagnose the nature of the pus and the nature of the infection presented to us in an individual case. Now, we certainly know that the microbes producing the different kinds of traumatic infection known clinically as septicemia, pyemia, diphtheria, phlegmon, erysipelas, may one and all invade the genital tract; we may hence infer the existence of an equal number of varieties of *salpingitis*, *i. e.*, *salpingitis septica*, pyemica, diphtheritica, phlegmonosa, erysipelatosi. In order to complete our scheme, we should add *salpingitis putrida*, corresponding to putrid infection, whereby the difficulties are still further increased.

Notwithstanding the progress made in bacteriology, we have not yet succeeded in isolating and classifying the microbes which cause the clinically different forms of traumatic infection; consequently, it is impossible to do this with regard to the different forms of *salpingitis septica*. However, the work done by Doléris, E. Fränkel, Lomer, A. H. Barbour, Noeggerath, Cushing, in the domain of puerperal infection, has given us some positive results.

There are two points which are to be considered fundamental:

(1) The microbes of puerperal septicemia are identical with those producing traumatic infection in general. During the puerperium after abortion, as well as after parturition at term, the genital tract is far more susceptible to infection, or the conditions are far more favorable to the spreading of infection, than at other times.

(2) As has been demonstrated by Ogston, Hueter, and Rosenbach, all suppuration is due to the action of microbes: several varieties of these, like the *streptococcus pyogenes* and *staphylococcus pyogenes*, have been closely studied, but it is known that they are not the only varieties which produce pus. As doubtless all of these carriers of infection may play a rôle in the production of *salpingitis*, we can readily see how complicated the question of infectious diseases of the tubes has become and how unscientific and untenable is the meaningless name of pyo-salpinx. Yet there is a certain comfort in hoping that the matter may be somewhat simplified. Some of the forms of traumatic infection, for instance, sepsis and diphtheria, pyemia and phlegmon, are probably produced by identical micro-organisms, and the course of the disease may be

modified by the nature of the tissue first attacked and by the manner in which the infection spreads, whether by the blood or lymph channels.

All of these infections, as is well known, have a double effect—a local one in the genital tract, and a constitutional one, which is brought about through the medium of the circulation, and which is seen not only in the system at large, but also in the localization of the infection in organs distant from the point of entrance of the micro-organism. Where systemic effects are produced by the virus of putrid infection, the disease is called sapremia; where by the virus of septic infection, septic toxemia or ptomaine poisoning; when by that of purulent infection, pyemia.

We thus meet with an essential difference between the diseases of the genital tract, produced by the microbes of Group I. and those of traumatic infection. The above-mentioned severe and acute constitutional symptoms are but slightly indicated, or may even be absent in the diseases of the first group, *i. e.*, gonorrhea, tuberculosis, actinomycosis, whose course is chronic; whereas in diseases of the second group the rapidity of their development and the malignity of their course may almost entirely obscure the local disturbance of the genital tract.

As is readily seen, the septic diseases of the tubes are not independent diseases; aside from the local disturbances co-existing in the uterus, vagina, and external genitals, the whole circulatory system is usually affected. In this respect, as Lawson Tait rightly remarks, septic disease of the tubes is not a specific ailment; this, however, is of no importance in an enumeration of the varieties of salpingitis. An endometritis or a colpitis gonorrhoeica may co-exist with a salpingitis gonorrhoeica, and in the same way salpingitis septica may be accompanied by other diseases of the sexual organs, which are due to the same cause. There is, of course, no such thing as an affection of the tubes merely.

Salpingitis septica, co-existing with severe puerperal septicaemia or "lymphatic peritonitis" has never as yet, it is true, given the surgeon an opportunity to remove the principal focus of the disease by extirpation of the tubes. It is possible, however, that under certain circumstances such a procedure might be indicated. B. S. Schultze, s. "Verhandl. d. gynaekolog. Section d. Versammlung Deutscher Naturforscher," in Berlin, 1886, has recently succeeded in amputating a puerperal uterus, in a case in which it was impossible otherwise to remove the placenta, which had become the source of septic infection. Lately two cases came to my knowledge in which the tubes burst from overdilatation with pus, whose nature, whether gonorrheal or septic, was not ascertained. In both cases a general peritonitis resulted which proved fatal, in one on the fourth, in the other on the twenty-first day after confinement. It is clear that in both these cases the

salpingitis had existed before delivery. I shall afterwards relate a case of my own where this certainly was the condition. Cases of this kind will be diagnosed more frequently and more readily as soon as our attention has been called to them, and we may then expect to hear of their treatment by operation. Cases of salpingitis, consequent upon traumatic infection in non-puerperal women, are, or course, of much more frequent occurrence. The carriers of infection may, for instance, be directly introduced into the tubes by means of an infected sound. The introduction of a septic instrument into a uterine cavity may be followed by a septic salpingitis. In cases in which we observe an exudative pelveo-peritonitis after the introduction of an infecting sound, after an intrauterine injection or a curettement of the mucosa uteri, the infection almost always spreads to the pelvic peritoneum by way of the tubes and exceptionally only through the muscular walls of the uterus. The severe systemic disturbances, the diseases of the uterus and pelvic peritoneum, may gradually subside, whereas the tubal affection remains. A pyo-salpinx has formed, the tubes are filled with pus, which can have been produced only by the action of one of the specific microbes of traumatic infection; perhaps by the staphylococcus pyogenes.

Two cases of my own may serve as illustrations. In one of them a physician had performed abrasio mucosæ uteri without antiseptic precautions, infection took place, and a pelveo-peritonitis exudativa followed, after the subsidence of which I could easily feel each tube thickened to the size of a thumb. At the operation, both tubes were discovered to have thinned walls and to contain thick pus resembling that found in an abscess. The ovaries were small and enveloped in masses of very dense connective tissue. I removed the tubes, but left the ovaries. The woman made a good recovery. The adnexa had been in a healthy condition before the mucous membrane of the uterus had been scraped. I have already published the other case (*Verhandlungen der Gesellsch. f. Geburtsh. zu Leipzig*, 17 April, 1882; *Centralb. f. Gynaek.*, 1882, p. 558); multipara of twenty-nine years; three spontaneous deliveries; at the fourth, placenta previa, and forceps applied before complete dilatation of the os. Puerperal fever. Recovery, but permanent pains in the right epigastrium. A short time after, renewed pregnancy, in the third month of which a prominent gynecologist ascertained disease of the right uterine appendages: at full term rapid and spontaneous delivery. On the third and subsequent days of the puerperium, chills, high intermitting fever, icterus, in short the symptoms of acute pyemia. Death on the thirtieth day. The autopsy revealed salpingitis purulenta dextra, and several abscesses in the right ovary and right broad ligament. The remainder of the genital organs, the adnexa on the left side normal. I explain the course which the disease took in this case in the following way: At the fourth parturition, septic infection

and localization of the disease in the uterus and the appendages on the right side; subsidence of the grave constitutional disturbances and persistence of a pyo-salpinx, probably due to streptococcus pyogenes, latency of pyo-salpinx during subsequent pregnancy. After delivery increased absorption of pus, abscesses in the ovary and broad ligament, acute pyemia and death. In a case of this kind, a septic infectious disease, originally extending over large portions of the sexual tract, is finally concentrated in the tubes. Why should not such a case, in which the tubes chiefly appear affected, present a "specific ailment" as well as does a case of pyo-salpinx gonorrhoeica, in which *ceteris paribus* we have the same limitation of the disease to the tube as a principal focus for further infection.

What I desire to prove by these somewhat extensive remarks is, briefly, as follows:

1. Numerous cases of salpingitis purulenta ("pyo-salpinx") are due to traumatic infection, are septic forms of salpingitis.

2. There are as many forms of septic salpingitis as there are forms of traumatic infection, and of microbes producing the same.

There is, however, an additional reason why Lawson Tait denies septic salpingitis to be a specific ailment. As we see from his startling remarks in the *Medical News*, April 24th, 1886, he does not believe in sepsis at all, does not believe in infection, denies the principles on which the practice of modern surgery and obstetrics is based. He has been taught nothing by the researches of Semmelweis and Lister, Pasteur and Koch. And why? Because his own success in combating septic infection is to him proof of the non-existence of septic infection. We are accustomed to Lawson Tait's reckless statements. Without taking the trouble to refute them scientifically, I but wish to call to mind his assertion that menstruation does not depend upon the ovaries, but upon the tubes, that the mortality of Cesarean operation is still ninety-nine and two-thirds per cent. His denial of traumatic infection is a statement of the same kind. I should like to hear Lawson Tait's answer to the following questions:

1. What disease, before the introduction of Listerism, killed thousands of patients who had received wounds or who had been operated on? What, according to his views, was the cause of death in his own cases, when he lost patients after operations, if not, as everybody else believes, septic infection?

2. What is puerperal fever?

Lawson Tait disputes the correctness of our teachings regarding infection, but he has failed to give us any other explanation of its phenomena.

GROUP III.—FORMS OF INFECTIOUS SALPINGITIS PRODUCED BY SPECIFIC, BUT AS YET UNKNOWN, MICROBES.

1. *Salpingitis syphilitica*.—This form has been described by Bouchard and Lépine (*Gazette Méd. de Paris*, 1866, No. 41). Both

tubes were swelled to the thickness of fingers, and contained three gummata of the size of hazelnuts. The description given by these authors of the tubal disease agrees fully with the changes brought about by syphilis in other organs. Of more recent authors, Gill Wylie expresses his opinion that tubal syphilis does occur ("Diseases of the Fallopian Tubes," etc., January 24th and February 7th, *The Medical Record*, 1885). He says that "syphilis may cause salpingitis, just as it does otitis or ozena." He also calls attention to the fact that "endometritis in syphilitic subjects has a most obstinate character." Compared with the actual observation of Bouchard and Lépine, the clinical remarks of Gill Wylie are, of course, of theoretical value only.

Like Lawson Tait, I myself have never yet had occasion to observe an undoubted case of tubal syphilis. We should bear in mind, however, that our attention has been but little called to the anatomy and clinical forms of this disease. We are not justified in denying this form altogether, as we are not in a position to dispute the reliable authors who have testified to its existence. Others may have seen what we ourselves have never had occasion to witness. I desired to give a most complete enumeration of the forms of infectious salpingitis hitherto described; I could as little have omitted salpingitis syphilitica as I could have done salpingitis actinomycotica, of which also up to date but one authentic case has been observed.

2. Occasionally we find in young girls, who have never had intercourse with man, tubes filled with pus and pelveo-peritonitis. This has been accounted for in various ways. It has been said that in these cases a serous catarrh is intensified and changed to a purulent inflammation; that the suppuration is due to catching cold at the menstrual period, or to a trauma. These cases have also been adduced as evidence to show "that tubal suppuration is not always of gonorrheal origin." Yet also in these cases there is always an infection, and usually a gonorrheal infection. I myself have seen a comparatively large number of girls of all ages, from infancy to puberty, who were infected with gonorrhea. We know how easily the infective germs are carried from one person to another; for instance, parents and children may use the same sponge or bath-tub; the germs may adhere to fingers, linen, etc. The girls infected may further spread the disease in school, and so on.

Aside from the gonorrheal, the tuberculous infection is to be mentioned as a cause of pyo-salpinx in young girls. Just at present I am treating a girl of 17, who is suffering from a disease of both appendages, complicated with pelveo-peritonitis. The tubes can be distinctly felt, and are thickened and nodular. She has a hectic appearance, like that of a consumptive; her lungs, however, are normal. The father of the girl was, not long ago,

operated on for tubercular orchitis. I hope that the operation will confirm my diagnosis of salpingitis tuberculosa.

Undoubtedly the microbes of traumatic infection may also, after accidental lesions of the external genitals, get into the tubes of young girls; they may also enter from the peritoneal cavity. I know of a case, a girl of 16, in which an inflammatory disease of the right uterine appendages developed consequent upon a retro-phylitis.

My reason for again considering these forms of infectious salpingitis belonging to Groups I. and II., in regard to their occurrence in children, is this: There are evidently other infections of the female genital tract, which have been observed in children, but which have not as yet been recognized as special forms: consequently they are to be placed in Group III., in opposition to the forms of the two preceding groups. E. Fränkel, of Hamburg ("Bericht über eine bei Kindern beobachteten Endemie infectiöser Kolpitis," *Virch. Arch.*, February, 1885), and Johann C'seri, Budapest ("Zur Aetiologie der infectiösen Vulvo-vaginitis bei Kindern," *Wiener Med. Wochenschrift*, 1885), describe an infectious disease of the vagina and vulva, the former believing it to be due to a special coccus, the latter to a coccus identical with Neisser's gonococcus.

Hennig ("Krankheiten der Eileiter," page 67), in a girl of 10, and Eppinger (*Prager Zeitschrift für Heilkunde*, 1882, page 36), in an adult, witnessed a dysenteric inflammation extend to the mucous membrane of the genital tract; the disease in its new location assumed the appearance of a diphtheritic inflammation.

Suppuration is sometimes observed in the vagina of children suffering from helminthic disease. In these cases the suppuration is not caused by the irritation of the parasite, especially the oxyuris, but by certain microbes carried into the vagina by the parasites. The nature of these microbes has not as yet been sufficiently investigated to allow of their classification.

It has long been known that certain infectious diseases, like typhoid fever, scarlatina, variola, cholera, may invade the genital tract. The local affections are probably caused by the same specific microbes which produce the typical constitutional disease. This, however, still remains to be proven.

At the close of this enumeration, I wish to repeat that in every case in which the vagina or uterus is the seat of one of the diseases named, such disease may extend into the Fallopian tubes. I am well aware that I am standing on an unsafe scientific basis regarding my third group of forms of infectious salpingitis. For this very reason I deemed it advisable to group them together, thus keeping them apart from the better-known forms; besides, I desired to point out the object which should be kept in view in investigating this subject, and in endeavoring to elucidate it still further. It is, finally, self-evident that there are also mixed forms

of salpingitis. Different varieties of micro-organisms may enter the tubes either simultaneously or successively. The forms most frequently found combined are the microbes of the gonorrheal and tuberculous, and of the gonorrheal and traumatic infection, and those of the different varieties of the latter.

Every physician whose scientific standpoint is the same as mine will admit that matters regarding salpingitis are immensely more complicated than Lawson Tait imagines, and that it is not sufficient to make an abdominal section, to remove the uterine appendages, and to satisfy one's self with the diagnosis of pyo-salpinx in case the tubes are found filled with pus; but that it is our duty, employing all the means furnished by modern science, to endeavor to make an accurate diagnosis of the form of disease affecting the uterine appendages before the operation, and afterwards to add to our clinical observation careful pathological and bacteriological examination of the specimen. This certainly is a higher standpoint than that occupied by Lawson Tait, to whom the removal of the uterine appendages is the chief thing, and who, neither before nor after the operation, concerns himself with the nature of the disease treated. He admits himself that in every fifth case he made an error in diagnosis. In a man like Lawson Tait, so great in his own estimation, it seems rather small to attempt to conceal his ignorance by resorting to insulting and scurrilous remarks in regard to German scientists. I advise Mr. Lawson Tait to learn German and to read the works of German gynecologists; he may perhaps come to the conclusion that there is much which he might profitably study.

Here in Germany, Lawson Tait is held in high esteem, as he deserves to be, on account of his brilliant practical results. We have long since, however, ceased to regard as serious his theoretical utterances, which pretend to be scientific. The tone which he adopts in his polemic writings does not prevail with us in Germany, and it is certainly looked upon as undignified by every gentlemanly Englishman. I am, sir, etc..

DR. M. SAENGER,

Privatdocent at the University of Leipsic, President of the Obstetrical Society of Leipsic.

REVIEWS.

A MANUAL OF MIDWIFERY. By ALFRED LEWIS GALABIN, M.A., M.D., Obstetric Physician and Lecturer on Midwifery and the Diseases of Women to Guy's Hospital, etc. 8vo, pp. 740; 227 woodcuts. P. Blakiston, Son & Co., Philadelphia, 1886.

The author has succeeded in his endeavor "to produce a book which should be literally a manual in point of size, and yet should include all that is likely to be required by students or practitioners," and in so doing has shown an unusual amount of originality, as well as a very lucid and practical way of expressing his opinions. His teachings, while they accord in the main with established authorities, vary on some quite important points, and throughout impress the reader as having been largely formed from an extensive personal experience.

In the first chapter, the obstetric anatomy and development of the pelvis is described, clearly, practically, and sufficiently, yet without unnecessary detail, the mathematical mind of the author furnishing very clear and logical demonstrations of the various forces acting upon the pelvic bones and their resultants, both during the normal development and where from some pathological cause the usual relations of these factors are disturbed. In the chapters treating of pelvic deformity, the same mathematical clearness in demonstration is again shown in the simple and practical classification of the various deformities, and in their description.

This is the first of English text-books which urges the necessity of the bimanual examination as a means of diagnosing early pregnancy, the author admitting that if the peculiar elastic enlargement of the fundus, which we know as Hegar's sign, be found and if, in addition, in a multipara, a little mucoid secretion can be squeezed from the nipple, a practically certain diagnosis of pregnancy, even during the second or third months, can be made by one who possesses the requisite *tactus eruditus*, this being qualified by the very true remark that the inexperienced might easily overlook a pregnancy of even more than three months' standing.

In the mechanism of labor, the causes of flexion are described as twofold: first, that which is ordinarily given and which depends upon the position of the occipital condyles nearer to the occiput than to the forehead; and, second, a cause which acts even if there be no force transmitted through the condyles and which results from the relation between the shape of the head and the pressure exercised upon it at the girdle of contact either with the os uteri or the yet imperfectly-expanded soft parts elsewhere; the resultants of these various forces forming what is called in mechanics "a couple," and so causing the movement of flexion. The recognition of this cause and its geometrical proof are original with the author.

The management of normal labor is in general accord with the usual teachings. The author advocates the left lateral position during the second stage, and that or the dorsal position, at the choice of the accoucheur, during the third stage. He might advan-

tageously advise the dorsal position in all cases after the expulsion of the child, as allowing a more perfect and easy control of the uterus during the expulsion of the placenta, and in case of any possible hemorrhage.

The careful use of chloroform is recommended during the second stage to dull sensibility and to lessen the force of the pains as the head is passing the vulva. As chloroform, when administered to the surgical degree, produces more complete uterine relaxation than ether, it is recommended as the anesthetic for obstetric operations, especially version, except where the patient is greatly exhausted or has feeble heart action.

The immediate suture of the perineum is advocated in every case where a laceration involves more than merely the fourchette.

The pages devoted to the treatment of extrauterine gestation are behind the times in that they do not properly recognize the claims of electricity as a means for the early destruction of the fetus. Puncture of the sac, with aspiration or injection of morphia (mortality 77%), is suggested, and, for the expert, laparotomy is advised as being the safest and best method of procedure. Electricity is said to have been "reported as successful in two or three cases," and "may be tried without much risk."

When the medical mind of England and the continent awakes to the appreciation of the almost absolute certainty and safety of this treatment, and lets the battery take the place of the aspiring needle and scapel in *all cases of extrauterine pregnancy seen before rupture and before the end of the fourth month*, many lives which now would be lost will be saved. In America, electricity is the accepted treatment, and nearly forty cases without a failure bear witness to its efficacy. In regard to abdominal pregnancy, or any case which goes beyond the fourth month, the author is in accord with nearly all when he adopts expectant treatment, condemns laparotomy at term, and advises it four or five months after the death of the child. But even here (supposing that we do not wish to submit the mother to the very grave dangers of primary laparotomy, the only means by which we could hope to deliver the child alive), why should we not destroy the fetus as soon as we become sure of our diagnosis, and so prevent its further growth? Would not an immature fetus be more apt to undergo absorption, or would not its subsequent operative removal be less serious than if it were fully developed? Would not the prognosis for the mother be improved?

Some practical points, where the author differs with most authorities, are in the choice of the lower leg in version for shoulder presentation, together with the application of a fillet to the pro-lapsed arm; the use of a serrated hook for decapitation; the use of the vectis in protracted labor with an unreduced occipito-posterior position of the vertex; and the use, under certain conditions, of an oscillatory movement in extraction with the forceps. The indications and method of this latter procedure I will give nearly in the author's own words, omitting only its geometrical demonstration, and allowing the reader to judge for himself concerning its advisability. Two indispensable conditions are that the head shall have entered and be *fixed in the pelvis by friction*, and that the head shall be so firmly grasped by the forceps that the blades do not slip over its surface; then whenever the oscillatory movement is made, the friction over a part of the head is reversed

in direction, since it is made to resist a slipping back instead of an advance. Hence the force required to produce advance is less than that which would be necessary with direct traction by twice the magnitude of the friction which is so reversed; for the reversed friction, instead of opposing the tractile force, now assists it by neutralizing an equal amount of friction at the other side of the head. Under the most favorable conditions possible, the amount of friction reversed might be nearly one-half the whole. In this case, nearly the whole of the resistance due to friction might be done away with by the use of the oscillatory movement with the handles. The gain which can be obtained is measured solely by the amount of friction which can be reversed. In all cases in which the head is movable and can be pushed back in the interval of pains, the oscillatory movement fails to bring any mechanical advantage. When, however, the head is engaged in the pelvic canal, and impacted in it by friction so that it cannot readily be pushed back in the interval of a pain, and when moderate direct traction fails to cause any advance of the head, oscillatory movements of the handles may be cautiously tried before recourse is had to craniotomy. The oscillation should be limited in degree, and with each oscillation should be combined firm compression of the handles, so as to make the head one solid mass with the blades, and the maximum of traction which it is thought safe to exert. The oscillation, to be of service, should also be in that diameter in which the head is most tightly gripped by the pelvis. Thus in the flattened pelvis it should be backward and forward, in a uniformly contracted pelvis it may be in both directions, or the two may be combined in a limited circular movement. Side-to-side movement in a flattened pelvis is entirely useless, and only likely to be injurious. The oscillatory movement should not be persevered with long unless the head is found to advance with it, for, if the leverage is successfully called into play, there must be an advance at each oscillation. The mechanism by which this movement causes advance is analogous to that by which a cork is got out of a bottle by pushing it from side to side, though the shape of a cork, a long cylinder, is much more unfavorable for such leverage than is that of an ovoid body like the fetal head. The operator may fail to exert leverage in two ways. The blades may slip backward and forward over the head, instead of holding it in one solid mass with themselves; the head is then likely to be injured by the friction. The head may simply sway backward and forward on its central axis, instead of advancing; the friction is then most likely to do damage to the maternal soft parts. There is another way in which a very slight oscillatory movement may be of advantage when the head is impacted in the pelvic canal by friction which depends upon the fact that statical friction, or friction between bodies at rest, is greater than dynamic friction, or friction between bodies in motion, especially when the bodies have been long in contact. When friction is a main element of the resistance, a slight oscillatory movement of the head may convert the statical friction into the lesser dynamical friction over the greater part of its surface. For this purpose the slightest possible oscillation of the handle is sufficient, provided that the head is held tightly enough to take part in it.

Theoretically perfect axis-traction with ordinary curved forceps is shown to be geometrically and mechanically possible, and

is practically so in easy cases: where, however, it is necessary to exert great force, or in very high operations, the author admits its difficulty and the superiority of some form of axis-traction instrument.

The Cesarean section and the Porro operation are described in accordance with modern views. The time for their performance is to be as soon after labor has begun as is possible. Laparo-elytrotomy is considered to be more difficult and to require more surgical skill than either of these operations. This question of greater difficulty, so often brought up, seems to a certain extent an imaginary terror, and one that will grow less and less as the technique of the procedure becomes better understood by the mass of the profession, and the value of the operation in its greater saving of life comes to be more widely appreciated.

In discussing puerperal fever, very strong statistical evidence is brought forward to prove that, contrary to the views generally held here and on the continent, it may, and often does, show itself as the result of infection by the poison of erysipelas, scarlatina, or even other of the zymotic diseases; the author believing that the affections which have been included under the title of puerperal fever, though they have a common element in the reception of some poison, cannot be reduced to a uniform pathology, but are various in their nature and origin, the three main classes being: endogenous toxemia, in which the noxious material is produced in the blood itself; septic intoxication or sapremia, in which a chemical poison only is absorbed; and septic infection, in which organisms multiply in the tissues, in the blood, or in both. These forms are often difficult to differentiate, and no strict line of demarcation can be drawn between them, whether they be slight or most virulent in form. The mortality is greatest in cases derived from the poison of scarlatina, erysipelas, or from some of the forms of puerperal fever itself. The contagious nature of the disease varies, being practically nil in sapremia or in localized pelvic cellulitis, most infectious in those forms which are themselves derived from contagion, and more contagious in severe than in mild cases. Letting this question of contagion be what it may, undoubtedly the only safe plan is for us to treat all of these cases as if infectious.

Many of us have seen puerperal cases where an erotic and impatient husband has been the exciting agent of much and serious trouble. Such erratic spouses might possibly be held in check did they know of the possible grave consequences to themselves, our author noting a case in which, after coitus in the puerperal period, the husband died from phlegmonous erysipelas of the penis, the wife dying apparently from puerperal septicemia.

In the matter of prophylaxis, the author advises those principles of antisepsis which are now so widely accepted. As a routine practice, he uses the vaginal douche at least twice a day, and believes it to be of very great value. Here we do not think it necessary, unless there be some especial indication for its use. The indications for intrauterine irrigation are very definitely given, and should be read by those who are accustomed to sticking in a tube blindly and washing out the uterus for every rise of temperature in the puerperium. A point, however, which can be criticised is the advocacy of metallic or vulcanite intrauterine tubes. These should never be used when glass can be obtained;

the principal objection to their use being that we never can tell when they are clean internally, whereas the transparent glass allows the slightest bit of foreign material to be recognized and removed.

Peritonitis is to be treated by hot fomentations covered by oil-silk. Quinine is the drug most relied upon, both as an antipyretic and antiseptic. Purgatives may be used cautiously where there is constipation at the outset, but only where the symptoms are not severe. If the temperature remains very high (105° F.) in spite of antipyretic drugs, it is to be reduced by the ice-water cap or a "temperature-regulator" of metallic tubing, with, if necessary, sponging of the whole body with tepid water. A temperature regulator may also be placed over the abdomen, if desired. Much stress is laid upon the necessity for supporting the strength by liquid nourishment, given in small quantities, at short intervals. Essential parts of the treatment of pelvic cellulitis and pelvic peritonitis are complete, and prolonged rest with poultices and counter-irritation over the seat of inflammation, vaginal irrigation with hot water (105° to 110° F.), good food and tonics. Pelvic abscess is to be treated by incision and drainage, so soon as pus can be detected.

This treatment differs in some respects from that which we are accustomed to consider the most advantageous. The peritonitis or cellulitis we prefer to treat by the application of the cold coil, so long as the temperature remains high, only applying the poultices and counter-irritation after the fever has disappeared. Quinine we find of most value when the fever is remittent in type. Antipyrin and the ice-water coil placed over the *abdomen* are our main agents in effecting temperature reduction. The metallic coil we do not use, preferring the lighter, more pliable, equally efficient, and more comfortable one made with rubber-tubing. We do not believe that mild purgatives, given at the very beginning of a temperature-rise, are at all likely to do harm. The other treatment mentioned seems to be above criticism, and we believe is that generally accepted as the best by the leaders in the profession.

BROOKS H. WELLS.

THE BRITISH GYNECOLOGICAL JOURNAL : being the Journal of the British Gynecological Society. Edited by FANCOURT BARNES, M.D. Part VIII., Nov., 1886. Smith, Elder & Co., London.

The number opens with a paper by WM. CHAPMAN GRIGG, on the "Dangers Arising from Diseases of the Uterine Appendages in Childbed," which is a report of four out of five consecutive deaths in Queen Charlotte's Lying-in Hospital, in all of which diseased conditions of the uterine appendages were present, which more than sufficed to account for deaths that, had they not been fully investigated, would have been attributed to puerperal septicemia.

"Menstruation in Monkeys" is the subject of an interesting communication by J. BLAND SUTTON. Careful microscopical investigation of the human uterus during menstruation had led him to believe that the disintegration of the superficial layers of the mucous membrane described by Williams and others did not occur, nothing more than a shedding of the superficial and glandular epithelia being found, if due care had been taken in hardening the specimens. Besides the loss of epithelium, there was a remarkable difference between the mucous membrane preceding

and succeeding the catamenial flow. Before menstruation, the tissue is everywhere infiltrated with rounded and irregular shaped cells, which he calls the corpuscular element. These cells diminish very considerably in numbers after the menstrual flow has ceased, to reappear before the next period. The preservation of the epithelium of the mucous membrane in the sections was a matter of extreme difficulty.

In the investigation on the monkeys, the animals, macaques and baboons, were killed at various periods of menstruation, the uteri immediately placed in the preservative fluid, and, though many observations were made, no disintegration of the mucous membrane was detected in any case; the conclusion reached being that while macaques and baboons suffer a periodical loss of blood from the uterus; there is no shedding of the epithelial lining of the mucous membrane and utricular glands; that the amount of blood which escapes is small in quantity, and that in examining badly preserved specimens, all the remarkable appearances described as occurring in the uterus of the human female could be produced.

Immediately following is another remarkable record of original research by ARTHUR W. JOHNSTONE, of Danville, Ky., entitled "The Menstrual Organ." Dr. Johnstone, like Dr. Sutton, found no disintegration of the mucous membrane during menstruation other than a slight swelling and desquamation of the superficial epithelia, with a lessening of the corpuscular element.

A startlingly novel assertion, however, is that the endometrium above the internal os *is not a mucous membrane*, but belongs to the "adenoid" tissues, and that menstruation is for it exactly what the lymph stream is to the lymph gland, or the blood current to the spleen. Improbable as this statement seems at first sight, a careful study of the author's reasons and proof that the tissue belongs to that class of organs (cytogenic) whose function is to replace the organic waste, and that it should therefore be classed with the spleen and thymus is very convincing.

These two papers represent a vast amount of careful research, and must be read to be appreciated, and should their conclusions be sustained by other observers, our theories of menstruation must be radically changed. Both Dr. Johnstone and Dr. Sutton are known to be experienced and careful investigators in the microscopical field, and their conclusions must be accepted until disproved.

MR. LAWSON TAIT reports *twelve cases of extra-peritoneal cysts* (allantoic) operated upon by himself between February 13th, 1881, and June 18th, 1886. Of these cases eight recovered and four died. "The cysts have a great clinical interest from the fact that they seem to lie dormant for years, giving rise to no symptoms at all until something excites them into inflammatory change. When this change is noticed, operative proceedings are at once demanded; and nothing could form a more complete cause of bewilderment to the inexperienced operator than his encountering one of these cysts. To close them is simply to leave the patient unaided. To drain them by a tube inserted into the pelvis from above is, as I have found by painful experience, not enough. But to drain them from above, and with the tube passing through the wall of Douglas' pouch, behind the uterus, down and out, has been followed by perfect success in my hands."

The papers mentioned are the most interesting in the number, which contains, besides, the usual summary of gynecology, much of which has already appeared in this JOURNAL. B. H. W.

A MANUAL OF OBSTETRICS. By A. F. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. 102 illustrations. Pp. 345. Third ed. Lea Bros. & Co., Phila., 1886.

This little manual, certainly the best of its kind, while it can never take the place of the larger text-books, fully deserves the popularity which has made a third edition necessary. Clear, practical, concise, its teachings are so fully abreast with recent advances in obstetric science that but few points can be criticised. We miss any mention of Hegar's sign of early pregnancy and would like to see more prominence given to electricity as *the* means for destroying the ovum in extrauterine gestation. B. H. W.

HYGIENE OF CHILDHOOD. By FRANCIS H. RANKIN, M.D. One of a series of lectures given by the Medical Board of the Newport Hospital, 1885-1886. Davis & Pitman, Newport, R. I., 1886, pp. 40.

This is a clear, practical statement of the hygienic rules and principles which should be observed in order to maintain the highest amount of physical and mental strength and vigor throughout the period from infancy to maturity, and, although written with an avoidance of technical terms and especially for the guidance of mothers and nurses, may be read with benefit by any of us whose duties bring us in contact with children. The pages treating of the care of girls during the years immediately preceding and following the establishment of menstruation, and which insist upon avoidance of excitement, comparative mental rest, careful attention to regularity of habits, to dress, and to diet, with, so far as possible, an out-of-door life, are especially to be commended.

B. H. W.

ABSTRACTS.

1. Charpentier: The Latest Method of Dilatation of the Uterine Cavity (*Nouv. Arch. de Gynécol.*, December, 1886).—In this paper, special reference is made to Vulliet's procedure of gradual dilatation of the uterine cavity by means of tampons for purposes of inspection and of treatment. The method is judged in a critical spirit from an analysis of seven reported cases where it was tested by others than the promulgator. Vulliet's aim is to maintain the cavity of the uterus (the cervix included) patent during weeks even if deemed necessary. The technique we have already described (*vide this JOURNAL*, November, 1886). It has been used so far in three affections—chronic endometritis, submucous fibroids, cancer of the uterus. C. has thus treated two cases of endometritis; in the one complete dilatation was obtained at the end of ten days, the endometrium was then curetted with ease, iodoform tampons applied

for six days, and then the patient pronounced cured; in the second case, twelve days were required for dilatation, the endometrium was touched with nitric acid, the cavity kept open by tampons for three weeks, and then the patient discharged cured. In only one of these cases was the tamponing painful. In case of fibro-myomata, after complete dilatation of the uterus, Vulliet cuts off the capsule, and leaves the expulsion of the tumor into the uterus to nature, aided by ergotin and electricity. He then completes removal by the classical method. Vulliet does not give the results in these instances, but Porak has followed the method (partially) in one instance and concludes that inspection of the uterine cavity thus obtained was not of any special service to him, and further the introduction of the tampons was very painful, and fifteen days were requisite for dilatation. Labail also reports a case in which, on the third day of dilatation, the temperature and pulse suddenly rose, the result of slight sepsis.

It is particularly in case of cancer that Vulliet recommends his method, having resorted to it in thirteen cases, in nine of which the treatment was purely palliative and in so far successful, and in four the disease was of recent date, and these are pronounced cured, although sufficient time has not elapsed to speak positively.

From a study of these and a few other cases, C. concludes: V.'s method is not always applicable, as is proved by the cases of Porak and Labail; when dilatation is obtained, accurate inspection of the cavity is possible, and the uterus may be kept dilated without inconvenience or injury to the patient for weeks and months. The uterus does not react, usually, against the tampons, and the patients are not confined to bed or the house. The chief question to be answered is, as to whether V.'s method offers hope of the possibility of the radical cure of cancer. C. simply states that under free dilatation it is certainly possible to eradicate the disease more thoroughly, and that, perhaps, through resort to it, the number of hysterectomies may be reduced. (To us, V.'s method does not seem to offer any advantages over thorough dilatation by means of, we will say, a tupelo tent. The finger, if trained, may thus acquire ample knowledge of the condition of the uterine mucosa, aided, where needed by the curette and the microscope. Possibly, from the standpoint of treatment, such complete dilatation might be of service in exceptional cases.)

E. H. G.

2. Doleris and Butte: Poisoning from the Use of Sublimate (*Nouv. Arch. de Gynéc.*, December, 1886).—From a series of experimental researches, these gentlemen reach the following conclusions: 1. When sublimate is used for irrigation of large wounded surfaces, there may result vomiting, diarrhea with tenesmus, albuminuria, often followed by death, which is frequently preceded by a notable fall in temperature. The lesions are found in the large intestine and in the kidneys (acute parenchymatous nephritis). 2. The excess of urea in the blood proves that it is the kidney lesion which causes the fatal issue. Clinically, therefore: 1. In case of extensive wounds in women sublimate should be rejected. 2. When it is being used, and the temperature rises, this may be a symptom of poisoning. 3. The urine should be examined daily whilst sublimate is being used. Albumin in the urine will point to the absorption of sublimate. 4. In face of its possible dangerous results, it is question-

able if sublimate should be used in obstetrics and in gynecology. There are cases, too, on record where women, although under the influence of mercury, were yet susceptible to putrid fever. (These conclusions should call renewed attention to the necessity of using weak solutions of sublimate for irrigation purposes. 1:4000 is strong enough, and some women are susceptible even to this. We have not yet found the ideal antiseptic, although hydronaphthol promises much.) E. H. G.

3. Huellman: The Glycerin Tampon as a Therapeutic Agent in Gynecology (*Der Frauenarzt*, I. and II., 1886).—The following are the main conclusions H. reaches from a study of the value of this agent in the treatment of the diseases of women: 1. It assists in the cure of chronic metritis, tumors of the uterus and vagina, vaginitis and vaginismus; 2. It assists in the relief of aggravated forms of displacement of the uterus, and acts as an essential adjuvant towards the cure of milder forms; 3. It is of value in causing absorption of exudations in the pelvis; 4. It materially aids involution of the uterus; 5. It is one of the most reliable styptics in case of any superficial hemorrhage, exclusive of post-partum hemorrhage; 6. It is of value in the differential diagnosis of cancer. These conclusions he bases on a series of illustrative cases.

E. H. G.

ITEMS.

1. Among the newly-elected Vice-Presidents of the British Gynecological Society are Drs. WM. T. LUSK and PAUL F. MUNDÉ, representing the United States.

2. The article on "Electricity as a Therapeutical Agent in Gynecology," by DR. PAUL F. MUNDÉ, which appeared in the December (1885) number of this JOURNAL, has been translated into French by Prof. P. Ménière, of Paris, and is offered as a prize to subscribers to his journal, the *Gazette de Gynécologie*.

3. DR. PAUL F. MUNDÉ has resigned the Professorship of Gynecology at Dartmouth College, which he has held since 1880. It is probable that the duties of the Chair will be assumed by the present Professor of Obstetrics, Dr. E. S. Dunster.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.]

APRIL, 1887.

[No. 4.

TETANUS FOLLOWING ABORTION.¹

BY

THOMAS C. SMITH, M.D.,

Washington, D. C.

WRITING on tetanus, Aretæus said: "And women also suffer from this spasm after abortion, and in this case they seldom recover." In many of our text-books brief reference is made to the subject, but, notwithstanding this fact, very few cases of the affection are to be found recorded, and the following case may, therefore, with propriety, be placed on record.

On June 23d, 1886, I was requested by Dr. Naylor to see, with him, a woman who was said to be suffering from tetanus. The following history was furnished by Dr. Naylor:

Mrs. V., the patient, age 27 years, the mother of one child, has not lived with her husband for several years, and has, in fact, led a life of prostitution, sent for Dr. Naylor on the 21st of June. She was complaining of severe pain in the abdomen, which was sensitive to pressure, for which she did not assign any cause. The doctor prescribed for her, and on his next visit, having his suspicions aroused, asked her the direct question if she had not aborted. This she denied, but in the course of the day her mother informed Dr. N. that she had found some clothes belonging to her daughter which were saturated with blood, and on unrolling these discovered a fetus of about six months' develop-

¹ Read before the Washington Obstetrical and Gynecological Society, Dec. 3d, 1886.

ment. On being apprised of these discoveries, the woman admitted that she had taken some medicine for the purpose of causing a miscarriage, and that she had been further aided by a colored woman, who had used a sharp instrument to puncture the membranes. The fetus had been passed some days before, and the woman had been going about ever since. An examination showed that she was having a very offensive, bloody vaginal discharge, for which injections of hot carbolized water were ordered, and quinine and opium were given internally. On the next morning Dr. Naylor discovered that the woman was suffering from tetanus, and invited me to meet him in consultation in the afternoon.

I found the woman in a deplorable condition. The hygienic surroundings could scarcely have been worse. The bed was filthy from feces, urine, and lochial discharge. The weather was hot, and the odor from the bed was almost intolerable. The woman's jaws were tightly closed, and between the teeth a spoon-handle had been forced to keep her from biting her tongue. The jaws could not be opened, by force, more than one-tenth of an inch. The head was drawn back, and the patient was screaming from the pain in the back of the neck. The mind was clear, and an effort was made to answer such questions as were propounded, but the information gained from the woman was most unsatisfactory, owing to the trismus and pain in the back of the neck. Deglutition was almost impossible. The skin was wet with perspiration, which had thoroughly saturated the one garment which the woman wore. Her pulse, as near as could be counted, was 160 per minute, but no effort was made to take the temperature on account of the extreme restlessness of the patient. There was evidence of great exhaustion present, as might be inferred from the symptoms as given above. Vaginal examination revealed an enlarged uterus, which was not painful on pressure, from which issued a muco-sanguineous discharge of disagreeable odor. The uterus, however, seemed to be returning to a normal state, judging from the condition of the cervix, which appeared to be closing. The discharge from the uterus was not excessive in quantity. The constant jerkings of the patient prevented the examination from being satisfactory.

It was agreed to give the woman a hypodermic injection of one-half grain of morphine at once, and to repeat it as occasion might require. She was also to have an enema containing chloral hydrate and potassium bromide in full doses, given in beef-tea and milk for the purpose of nourishing the patient, and this was to be repeated according to the judgment of Dr. Naylor as often as he deemed it necessary, to control the trismus especially. A narrow blister was applied extending from the occiput to the interscapular region, and was to remain eight hours. As the patient lived a short distance in the country, it was agreed that Dr. N. should remain at the house as long as practicable.

On my visit next morning, the woman seemed easier; the pain

in the back of the neck was almost gone, and several hours of sleep had been secured by the remedies used. The trismus, however, was no better, the pulse was still above 150, and the symptoms of exhaustion were more marked. Owing to the stupidity of the attendants, the blister had not been removed; it had been on about twenty hours; still no complaint was made of it. Excessive sweating continued. Mind still clear. Chloral continued, with nutrient and stimulating enemata. During the day, the woman continued to grow worse and died in the evening, about forty hours from the onset of the tetanic symptoms.

The necropsy was made by Dr. D. S. Lamb on the morning of June 25th, and the following are his notes:

"Dependent portions of body much decomposed, so that head and spine were not opened. Heart normal. Lungs normal, except old pleuritic adhesions on right side. Stomach and intestines distended with flatus. Liver, spleen, and kidneys decomposing. Uterus large, mucous membrane denuded, dark red; right broad ligament darkly congested. Right ovary shows a cyst cavity size of marble; left ovary small, apparently undeveloped."

What was the cause of the tetanus in this woman? Briefly the primary cause was the abortion, but not necessarily an injury done to the uterus by the instrumental and other means adopted to secure that end. The immediate cause was the exposure and fatigue brought about by the woman's efforts to conceal the consequences of her misdoings. This point will be further elaborated after attention shall have been called to some cases which have been placed on record by other observers.

Although all will admit that tetanus, occurring under any circumstances, is one of the most serious diseases which calls for treatment, yet we find Symonds ("Cyclop. of Practical Medicine," 1845, article Tetanus) writing as follows:

"The Greek author, to whom we have so often referred, intimates that women are very subject to the disease after abortion. We are not aware of any modern observations in support of this opinion. We remember, however, attending a young woman who was seized with locked-jaw soon after delivery of a still-born and immature fetus, but the affection readily gave way to a turpentine injection, and we looked upon it as a mere sympathetic accident."

Truly, we may say, this was a *very* mild case.

No one cause can be said to produce tetanus after abortion. The following cases will give some idea of the views of those

who have been called to treat the disease, and also indicate the line of treatment carried out.

Mascarel (*Bull. Soc. de Chir. de Par.*, 1865, Vol. V., p. 276) reports the case of a woman who miscarried at two and a half months. Examination showed a foreign body in the uterus, which was removed, and the hemorrhage ceased.

The tetanus was treated by the internal use of opium, and the external application of decoction of belladonna leaves. The patient recovered.

In the next case the disease was likewise attributed to the retention of a foreign body in the cavity of the uterus, and is recorded by Banga (*AM. JOUR. OBST.*, 1879, Vol. XII, p. 143).

The woman was 33 years of age. When the doctor was called, he found her suffering from tetanus, for which no cause could then be assigned. She died the next day. Questioning after death of the patient disclosed the following history: Her friends said that four weeks previously, after a pause of two months, the menses returned profusely, accompanied by severe labor-like pains in the back, and the discharge of large clots of blood. She thought she was aborting. She had no medical attendant, but lay in bed several days till the cessation of pains made her believe "she was all right again." Discharge of blood continued constantly up to within six days of the doctor's visit, when she expelled a large clot while in the water closet, after which there was no more bleeding until the day before the doctor was summoned, when there was "just a show." On the day the clot was passed, there was slight stiffness of the masseters and dryness of the throat. During the next three days, trismus increased, and on the following day tonic convulsions occurred. Dr. B. was then called, but, as stated, death ensued next day.

At the autopsy, the uterus was found to be $3\frac{1}{2}$ inches long and $2\frac{1}{2}$ broad between the tubes. "The cavity contained a large quantity of a dirty mass of dark-red color and creamy consistency; it consisted of a mixture of blood and detritus. After scraping off this bloody mass, the endometrium presented a smooth, velvety surface, excepting one spot on the anterior wall, near the opening of the right tube. Here was found a projection as large as a nickel, presenting the appearance of a remnant of placenta. One-half of it could easily be lifted from its base, and crumbled into several pieces of decomposed and grayish detritus; the rest was more closely attached to the uterus. The vagina contained a large quantity of yellowish discharge of creamy consistency and offensive odor."

Dr. Banga believed the disease to have been caused by the piece of retained placenta, basing his belief on the fact that tetanus occurring under other circumstances was more likely due to the retention of a foreign body in a wound.

Boyd's case (Proc. of the Dublin Obst. Society. *Dublin Jour. of Med. Science*, 1874, Vol. LVII., p. 583) proves that the presence of a foreign body is not requisite to produce the tetanic symptoms. The history of his case is as follows :

Patient, a thin, anemic primipara, suffering from abortion, produced by a fall in reaching a clothes line. Found the ovum protruding from the os; hemorrhage had almost ceased. The physician made an effort to remove the ovum with his finger, but failed, only a part coming away. As hemorrhage returned, the vagina was plugged, and remedies administered internally. Next morning the tampon was removed, and not again resorted to. The following day he was informed that the remains of the ovum had come away, and had been attended by some hemorrhage. On examination, he found the uterus collapsed, and no evidence, on digital pressure, that its cavity contained any remains of the ovum. She continued to do well, and the visits were discontinued. On the sixth day from the first visit he was sent for. The patient had spent a restless night, and had had several fainting fits; pulse feeble and quick; deglutition difficult and painful, with sense of choking; stringy mucus filling up the back of the pharynx; masseter muscles rigid, and teeth could, with difficulty, be separated to admit the index finger. These symptoms set in five hours previously, after awaking from a short sleep. No rigidity, except of the muscles of the face and neck. Gave chloral gr. xxv. every four hours. Beef-tea and wine.

The next morning he learned that she had slept ten or fifteen minutes at intervals. Opisthotonos had set in. Pulse 138. Increased chloral to gr. xxx. every four hours. Afterwards it was given by enema. He made a vaginal examination to ascertain if, by any chance, a portion of the secundines had been left in the uterus, but found that organ fast regaining its normal state. Two days later he introduced sea-tangle tents to dilate the cervix, so that the cavity of the uterus might be explored, and next morning he was able to make an examination, and satisfy himself that no portion of the ovum remained within the uterine cavity. The patient died on the sixth day from the commencement of the tetanus. A part of the time she had been taking an ounce of chloral a day.

Commenting on the case, Boyd says :

"The retention of a foreign body in the uterus, such as a detached ovum, or fragments of it, which is assigned by most writers as the principal cause of tetanus following abortion, could not be looked on as the true source in this case, as the dilatation of the os and exploration of the uterine cavity set that idea completely aside. I am inclined to attribute it to the irritation which the brain must have suffered from deprivation of blood in an already anemic subject, for we know how prone such subjects are to convulsions, . . . after even very trifling hemorrhage, and

it is very difficult to say where the line of demarcation can be drawn between the irritation that gives rise to the clonic spasms of convulsions in one case and the tonic ones of tetanus in another."

Kendall's case (Trans. N. Y. Med. Soc., 1876, p. 185) also demonstrates the fact that a foreign body in the uterine cavity is not necessary to produce tetanus. His case is as follows:

The patient was 32 years of age, generally healthy; nervous temperament; in the fourth month of her fourth pregnancy, while walking in the street on September 7th, with hardly any premonitory pain, was suddenly taken with profuse uterine hemorrhage. She was taken into a house near by and Dr. Kendall sent for. He found her in bed, flowing not profusely, and having only slight pains. Anodynes were prescribed. Six hours later the patient was comfortable, and the anodyne was repeated. On the afternoon of the 8th she was taken with more severe pains and hemorrhage. Vaginal examination showed that delivery was impossible at that time, and a tampon was introduced. On the next day he removed the fetus, but could not remove the placenta until the day after. On the 19th she had improved so that she was able to go to her home in an easy carriage, the distance being scarcely a hundred rods. On the 21st, the husband said his wife was quite smart, but thought she had "got rheumatism in the jaw," for she could not open her mouth. On examination, the patient was found to be suffering from tetanus, and chloral was ordered in ten-grain doses every two or four hours. Next day the symptoms seemed slightly modified, but the chloral had become offensive and the woman would not take it. Morphia, in large doses, was substituted, and produced some sleep; she also received remedies for moving the bowels, and stimulants. This course of treatment was continued five days, the symptoms steadily growing worse. On the 27th, vesicating liniment was applied to the spine. On the 28th, caustic potash was used the whole length of the spine, and seemed, for a day, to produce slight relaxation; it was then applied again. On the 30th, all the symptoms were aggravated. Dr. Kendall now insisted on the patient taking chloral, which was given every two hours while she was awake. An intelligent nurse was secured, and directed to sit by the patient and administer chloroform from a sponge, on the appearance of the spasms. The effect of this was good. Again the patient's stomach rebelled against the chloral, and morphia was substituted, the chloroform being continued. Symptoms again became worse, and recourse was again had to chloral with good effect. October 30th, fifty-three days after miscarriage, the patient was dismissed.

Dr. Kendall was satisfied that no portion of the placenta remained within the womb to produce the disease.

Bad hygienic conditions may be assumed to have had much to do with inducing the disease in the case of Dr. William Lee, of this city. (*National Med. Journ.*, Vol. II., p. 303.)

Patient colored, aged 35 years. December 7th, she aborted at about six months of gestation. There was considerable hemorrhage; the woman was attended by her mother; the exciting cause of the miscarriage was attributed to carrying heavy loads of coal.

Dr. Lee was called December 11th. He found the woman living in a low swampy hollow; "residing in a small frame shanty, and sharing its shelter with three or four other persons, and a number of dogs, pigs, and chickens. Decubitus dorsal, with knees drawn up; tongue coated, pulse 130 and small, respirations hurried; abdomen swollen, tympanitic, and tender on pressure over the uterus; lochia small and offensive; bowels very much constipated; no appetite, and living on a diet of crackers and tea; skin hot and dry. Suspecting fecal irritation as a cause of these symptoms, ordered *ol. ricini* \bar{z} ij., turpentine stupes, and pulv. Doveri in gr. xv. doses after a free action of the bowels. Next day she was somewhat better.

December 17th. Found the patient suffering from complete trismus, which had come on suddenly the night before, and unable to swallow from the lock-jaw and paralysis of the muscles of deglutition. After consultation with Dr. Ashford, the patient was removed to Columbia Hospital, where she was treated by full doses of opium, ice-bags to the spine, and, at the suggestion of Dr. Ashford, full doses of calabar bean. She died the next day. A peculiarity of this case was the low range of temperature. Thus we find that at 10 A.M., December 18th, pulse 130, respiration 36, axillary temperature 97.2° . 12 M., pulse 102, respiration 32, temperature 96.4° .

At the autopsy, which was carefully made, extensive disease of the uterus and contiguous tissues was found. The tissue of the spinal cord appeared firm, with no marked congestion. Both brain and cord were submitted to a microscopical examination by Dr. J. J. Woodward, but nothing of interest was elicited.

The following cases appear to have been caused by taking cold from unnecessary exposure. The first was observed by Dr. Carter P. Johnson. (*Proc. Med. Soc. Virginia, Stethoscope*, vol. I., p. 29).

Case seen in consultation. Patient *æt.* 27; mother of four children; general health good. Tuesday, September 3d, when six weeks advanced in pregnancy, experienced pain in loins soon followed by hemorrhage. Occurrence of symptoms attributed to fright. No examination permitted. Ordered lead and opium. Wednesday, tampon used to stop hemorrhage. No bleeding after use of tampon. Thursday, portion of placenta came away, and on Friday the remainder of the ovum. Saturday, sitting up in bed sewing. Tuesday 10th, engaged in a romp with a friend and afterwards sat by an open window for some time. At night sat by an open window watching a fire. Wednesday, 11th, slight

stiffness in the jaws which continued to increase until Saturday, when the physician was called in. Sunday Dr. Johnson was called in consultation. Ordered Hoffman's anodyne and black-drop every three hours, and to inhale sulphuric ether when necessary.

The treatment was by purgatives at first; then anodynes and antispasmodics. Blisters to spine dressed with stramonium. Ether when required.

The patient died September 19th, eight days from first appearance of tetanic symptoms, and sixteen days from the initiatory signs.

In Parker's case (same journal, p. 672),

The patient was a colored girl of 15 years. From the symptoms at first presenting, she was thought to be suffering from rheumatism due to exposure. She informed the physician that she was "unwell" three weeks previously. There was much restlessness and decided indisposition to talk. Ordered calomel and opium to be followed by oil. At 7 P.M., found her much worse; pulse 130 to 140, and quite unsteady; head thrown back: skin hot but moist, and great alienation of mind. Diagnosis, tetanus. Administered chloroform which completely anesthetized the patient in a few minutes, after at first producing high arterial excitement. She remained in this state about a half-hour, with almost entire relaxation of the posterior cervical muscles. Ordered calomel, quinine and morphia, and applied cantharidal collodion over the whole of the anterior of the chest and abdomen, and to the full length of the spine. Before leaving, again used chloroform "with the same happy effect." At 1 o'clock the next morning, the patient was delivered of a fetus of the third or fourth month. The placenta was removed without undue hemorrhage. "R. 35; P. 150, and of considerable force; head hot, skin moist, and patient delirious, though conscious of the birth of the fetus and removal of the after-birth." She died two hours afterwards.

The following are brief notes of the case reported by Thompson and Maclay (*Phil. Med. and Sur. Rep.*, 1869, vol. XVII., p. 313).

Patient aborted in the eighth week. Some constitutional symptoms followed. On the seventh day, she imprudently left her bed, exposing herself to currents of wind loaded with moisture. The same day took her meals in the basement. Next day she experienced slight stiffness of the jaws, but merely considered it a slight cold. This condition gradually grew worse. Two days later volatile liniment was ordered. On the eleventh day, visited patient and found her jaws nearly locked—opened by force one-eighth of an inch. Tongue stiff; abdomen tympanitic; neck stiff; head slightly retracted; slight spasmodic condition of the muscles of the larynx; great uneasiness in the precordial region.

Applied blister to the back of the neck. Took every two hours opium gr. ij. and tartar emetic gr. i. Next day symptoms aggravated. In connection with trismus, there was complete opisthotonos; bowels obstinately constipated. Cannabis indica ordered. Bowels relieved by enema. Tartar emetic again used. Quinine hypodermatically. Sept. 5th, death looked for hourly. Body rigid. Begged to be destroyed. Pulse 160; intermitting. Paroxysms recurring every few moments. Urine escaped involuntarily; deglutition impossible. Chloroform was now used by inhalation, and two grains of opium given after she had come from under its effects. Chloroform was again used, and under the effect of that agent and opium she went to sleep and slept five hours. Improvement continued and she recovered.

Fearon's patient (*Med. Press and Cir.*, N. S., Vol. IX., p. 207) was a woman 40 years of age, the mother of three children, the youngest being eighteen months old. She had not menstruated for four months; never had a miscarriage before. On arriving, Aug. 29th, he found the woman had lost an alarming amount of blood; was very weak; hemorrhage still continuing. On examination, he found the os dilated, but could not detect fetus or membranes. A neighbor had removed the cloth from the bed containing blood-clots, but she had not looked to see if there was a fetus. The miscarriage was supposed to have been caused by patient lifting a heavy bed on the preceding day. Before morning, the "woman was reduced to the last degree of exhaustion, being almost pulseless, with dimness of vision, coldness of surface, shallow and feeble respiration, and heart's sounds very weak."

She continued to improve until Sept. 6th, when she got out of bed, and the physician ceased his visits. On the 8th, he was sent for, the woman complaining of pain in the neck. In the evening she was unable to open her mouth more than an eighth of an inch. Ordered an enema of oil, turpentine, and asafetida, which was retained; and in a few minutes he was surprised to see her sit up in bed, declare herself as well as ever, and drink a bowl of beef-tea. Two hours later, the jaws were as firmly closed as before. Enema repeated without effect. She continued to grow worse and died eight days after the first appearance of the symptoms of tetanus. Treatment was by chloroform, belladonna, quinine, brandy, and the external application of infusion of tobacco.

Wood and Malcolm report two cases (*Monthly Journ. of Med. Sci.*, Dublin, 1850, Vol. X., p. 387).

In Wood's case, symptoms came on after the physician had discontinued his attendance. The woman died in two days.

Malcolm's patient aborted two weeks before the disease appeared. Tetanus was preceded by a severe attack of tonsillitis, due to taking cold. On the second day of the tonsillitis, tetanus set in and the woman died on the fourth day.

Reference was made above to the low range of temperature in Dr. Lee's case. In most cases the temperature is very high. In Hœpffner's case (*Gaz. Med. de Strasb.*, 1874, Vol. XXXIII., p. 116.) the temperature before death was 108.5°. The patient had been treated by chloral.

A sufficient number of cases have been cited to illustrate the phases of the disease, the methods pursued for the relief of the patients, and the most common causes assigned for the production of the malady. In addition to the causes mentioned, I will merely add that laceration of the cervix has been occasionally found and, in the absence of a better reason, has been named as the factor. It is not worth while to mention other causes, most of which are purely supposititious.

The first thought suggested by a consideration of the cases above cited is that nearly all of them were due to carelessness and might have been prevented. The treatment of the disease is eminently unsatisfactory, and the only hope of saving women from its grasp is by carefully protecting them from the causes which have been shown to be most generally operating. Thus, as far as practicable, look to the hygienic surroundings of the patient. Secure cleanliness of the bed-clothing by frequent changes. Use vaginal injections to remove retained blood-clots and secretions. In the management of miscarriage cases, see to it that the uterine cavity does not retain any foreign body, for the retention of pieces of afterbirth and membranes has been shown, with a reasonable degree of certainty, to induce the disease. In the next place, impress upon the patient the importance of avoiding exposure, too soon after abortion, to currents of air, and of standing on cold and damp floors; also to avoid fatiguing herself and indulging in anxieties and self-reproaches.

We are too prone to look upon a miscarriage as a very trifling occurrence, and yet we know that a great many ailments, which make invalids of women, are traceable to this seemingly insignificant incident. The occurrence of the disease to which attention is drawn in this paper should impress upon us the necessity of looking upon abortions as evils which are not to be sneered at or treated as of little importance. And to endeavor to make this conviction more lasting, I will again quote the words of Aretæus, "And women also suffer from this spasm after abortion; and in this case they seldom recover."

A NEW EXPLANATION OF THE RENAL TROUBLES, ECLAMPSIA, AND OTHER PATHOLOGICAL PHENOMENA OF PREGNANCY AND LABOR.

BY

A. F. A. KING, M.D.,

Prof. of Obst., etc., in the Med. Dept. of Columbian University, Washington, D. C., and in the Univ. of Vermont; Prest. of the Washington Obstet. and Gynec. Soc., etc.

(Concluded from page 245.)

20. *Do convulsions, nephritis, etc., occur in cases of "transverse" presentation during labor, and in most of which cases the child was, it may be presumed, oblique and wholly above the pelvic brim during pregnancy?*

When I had reached the theoretical views previously expressed, it was difficult to avoid the *a priori* conclusion that women with transverse presentation ought to be more or less exempt from the effects of uterine or fetal pressure upon neighboring blood-vessels. On consulting the works of recent obstetric authors upon this point, I find many of them are completely silent with regard to it. At least I find no reference to it—and I have searched with tolerable care—in the works either of Leishmann, Playfair, Lusk, Barnes, Parvin, Byford, Meigs, Galabin, Ramsbotham, Jr., or Velpeau (Meigs' translation). They appear to have paid no attention to the relation of eclampsia, etc., with cross presentations. At the same time, it will be observed that in discussing the "obstetric treatment" of eclampsia, they refer exclusively, or almost exclusively, to head presentations. None of them tell us what to do in the way of obstetric treatment in cases of convulsions when the child is presenting transversely, and which would seem to indicate, though not, of course, with any certainty, that they have seldom or never met with such cases.

The records of obstetric literature, however, are not entirely barren on this question.

Dr. Robert Collins, one of the masters of the Dublin Lying-in Hospital (Collins' "Midwifery," Am. Ed., 1838, pp. 102-103), remarks: "There was but one case of convulsions, during my residence in the Hospital, where the child presented preternat-

urally; there was not one case with a preternatural presentation during Dr. Clarke's residence, and Dr. Labatt has stated the same fact in his lectures while master of the Hospital. In these three different periods there were 48,397 women delivered, so that from this we may infer, where the presentation is preternatural, there is little cause to dread the attack." I must here specially remark that no statement is here given as to whether the *preternatural* case was a breech, face or transverse presentation, for in those days a preternatural presentation was understood to mean "any presentation other than that of a head." With relation to this particular case, however, mentioned by Dr. Collins, we are fortunately no longer in doubt, for he states (p. 103) that "thirty cases of convulsions occurred in the Hospital during my mastership; . . . in *fifteen* of the 30 the patients were delivered by the natural efforts; in *six*, delivery was effected by the forceps; in *eight*, by the perforator and crotchet; and in *one* the *feet* presented.

Denman ("Introduction to Pract. of Mid.," 7th ed., 1832, p. 430) says: "I was for many years persuaded that convulsions happened only when the *head* of the child presented; but experience has proved that they sometimes occur in *preternatural* presentations." He does not specify that they occur in transverse presentations, and his definition of preternatural presentation (p. 337) includes breech and inferior extremities as well as shoulder and superior ones.

Dr. Fleetwood Churchill observes ("Theo. and Pract. of Mid.," Am. ed., 1866, p. 475) that "when convulsions occur at the commencement of labor, it might naturally be attributed, in some cases at least, to mal-presentation of the child; but this is *not* the case. Mal-presentation is observed very rarely in cases of convulsions." His definition of "mal-presentation" (p. 409) includes any part other than the head.

Dr. Carl R. Braun ("The Uremic Convulsions of Pregnancy," etc., translated by Duncan, 1858, p. 56) says: "Faulty position of the child is so seldom found in eclampsia that we are not warranted in assuming a causal relation between the two." On page 156, referring to the obstetric treatment of eclampsia, he further remarks: "Presentation of the shoulder and pelvis, which are very rarely observed at this" (referring to the expulsive) "stage of labor in eclamptic cases are to be treated on general principles," etc. This is just about what any

one would say, in writing a complete essay on the subject, whether such cases *had* or had *not* been met with. The statement also mingles together presentations of the *shoulder* and *pelvis*, which is unfortunate; for it will be seen farther on that breech presentations *may* be associated with eclampsia.

Dr. Gunning S. Bedford ("Obstetrics," 1867, note to page 497) says: "It is an interesting fact to note that when convulsions occur during labor they do so, in the great majority of cases, in head presentations; and, strange as it may appear to those who have not examined the subject, they are extremely rare in mal-positions of the fetus."

Rigby ("On Midwifery," 1851, p. 329) remarks: "It is rare to find convulsions complicated with mal-position of the child; indeed, so uncommon is the occurrence of it under these circumstances, that we may feel almost certain, on being summoned to a case of convulsions, that there will be little chance of this additional difficulty being superadded."

Dr. Thomas More Madden tells us that "in almost every instance of puerperal eclampsia that I have met with the presentation was natural, and the experience of most other practitioners is similar to my own on this point" ("Proc. Dublin Obstet. Soc.," May 9th, 1874, p. 162).

In a paper by Dr. Fr. Schauta, Clinical Assistant to Prof. Späth, of Vienna (See *Archiv für Gynäcol.*, vol. XVIII., p. 274, 1881), containing statistics of the obstetric clinic of the Vienna Hospital, from its foundation in 1834 till the end of June 1880, we find a record of 134,345 deliveries, embracing 344 cases of convulsions. Of these 344 cases of eclampsia the presentation was noted in 315, as follows:

Head presentation,	. . . . .	304
Face "	. . . . .	4
Breech "	. . . . .	5
Footling "	. . . . .	1
Transverse"	. . . . .	1
		—
Total,	. . . . .	315

It may be worth while to mention here that in 306 of these eclampsia cases, of which further details are given, there were 253 primiparæ and only 53 multiparæ; total, 306.

With regard to the presentation, Dr. Schauta remarks that

the enormous prevalence of head presentation attracts attention which cannot even be explained when we consider that a majority of the women suffering from eclampsia were in their first pregnancies.

Thus the records of the Vienna Hospital furnish one case of convulsions associated with transverse presentation of the child. I shall have more to say of this unique case presently.

Dr. Francis H. Ramsbotham ("Syst. of Obstet.," Am. ed., 1861, Keating, p. 425) mentions 59 cases of convulsions which he personally attended, and of the 62 children (there were three twin cases) he says :

- 41 were expelled naturally by the head ;
- 6 were delivered by craniotomy ;
- 6 by forceps ;
- 5 by *turning* ;
- 4 presented with the breech.

Total, 62

Eliminating the four breech cases, all the rest, it may be presumed, were head presentations, except perhaps the *five* delivered by *turning*. Of these last, however, we must note that he makes no mention of them having been *transverse* cases, as it is most likely he would have done had they been so, inasmuch as he *did* specify the breech cases. Moreover, turning is one of the methods of treatment he recommends in eclampsia, regardless of the presentation; thus he says (p. 433, see also 434): "Should the membranes be unbroken, we may turn the child and deliver by the feet." Furthermore he tells us (note to page 353) that he "delivered two hundred women under transverse presentations. Many of these cases presented a formidable appearance," the membranes having been ruptured as long as from two to seven days, in several, before the operation. In four evisceration or decapitation was necessary, but in no instance does he mention the complication of eclampsia.

He remarks further that in none of the cases did he bleed, except in a few "*to relieve the inflammation from which the soft structures were suffering, and to remove tumefaction.*" Now, had there been convulsions in any of these cases, I think he *would* have bled for *that* complication, and would also have recorded the fact, for on page 432, under the head of "*Treat-*

ment of *Convulsions*," he says: "Bleeding is our great reliance—the lancet is our sheet-anchor."

On the whole, therefore, I think we may fairly conclude that the entire 59 cases of eclampsia did *not* include a single one coupled with transverse presentation.

In 7,404 deliveries in the Lying-in Charity of Guy's Hospital ("Guy's Hosp. Rep.," 2d series, No. 2) there were fourteen cases of puerperal convulsions, all of them being head presentations, except one, which was "footling and funis presentation with partial presentation of the placenta."

Dr. Robert Lee's "Midwifery" (pp. 403–409, 1844) contains a tabular statement, with only irregular brief details, of 54 cases of convulsions, given in numerical order. Of these I make the following synopsis:

Under group 1 we may include those in which it is distinctly stated that the "head" presented, and those in which forceps, perforation, or craniotomy were employed, and which we infer were head cases. The number in this group was,	23
Face presentation, forceps used,	1
Under another group I include those of which it is said "labor was natural," or "delivered without assistance," or "by natural efforts," and which we may presume were head presentations. This number was,	15
Another group contains no mention or suggestion, either as to presentation or mode of delivery. This number being,	10
Case No. 44. Convulsions at seventh month, not delivered, got well, went to term,	1
Case No. 41. "Safely delivered,"	1
Case No. 52. "Artificial delivery" had recourse to,	1
Case No. 1. "Easily turned and delivered,"	2
Case No. 16. "Turning,"	
Total,	54

While, of course, it would be unfair to assume that in these cases of Dr. Lee's there was *no* transverse presentation, yet we cannot help but remark that no mention is made of such a case. Turning (in the two last-named cases) may have been employed in any presentation. Dr. Lee, it is true, mentions one case of face

presentation (Case No. 31). It is likely he would have mentioned a transverse one had it occurred. But of this we must remain in doubt. I present the record for whatever it may be worth on either side.

Dr. Lee also presents a statement (pp. 335-339), again with meagre details, of 71 cases of shoulder presentation, some of them a long time in labor, and submitted to great violence during delivery. He says (p. 334): "In a great proportion of these the operation of turning was undertaken in the most unfavorable circumstances both for the mothers and their children, after the liquor amnii had entirely escaped, and the uterus had not only been contracting many hours around the child, but repeated unsuccessful efforts had been made to deliver. Seven died from rupture of the uterus. Of the 71 cases, twelve were twins, and one triplets." But he mentions *no case complicated with eclampsia*.

Dr. Merriman ("Difficult Parturition," 1838, pp. 147-148) gives 48 cases of convulsions, but with meagre details, as follows:

In 6 convulsions after delivery. Children all alive. No mention of presentation.

3 were twins. "All delivered without artificial assistance."

11 were delivered by forceps.

9 delivered by perforator.

4 the operation of version was resorted to. Two of the women recovered. All the children were dead-born.

14 delivery without extraordinary assistance.

1 died undelivered. No mention of presentation.

Total, 48

Here again, unfortunately, the want of details leaves us in doubt. All we can say is that no case of transverse presentation is mentioned.

Dr. John Ramsbotham ("Practical Observations in Mid.," 1842) presents sixteen observations (cases) of eclampsia as follows:

Convulsions *previous* to labor:

CVII. Died undelivered. *Sectio cadav.*: "Uterus with child in it was in a natural and healthy state."

- CVIII. Fetus and secundines expelled during one of the paroxysms.
- CIX. Child expelled naturally.
- CX. Child expelled dead during her struggles.
- CXI. Twins. Breech presentation: delivered by hand grasping feet. Second child delivered in same way.
- CXII. Os dilated. "Turning on account of imminent danger of woman."
- CXIII. Natural and easy labor.
- CXIV. Natural labor.
- CXV. Natural labor, though turning *had been considered*.

Convulsions *during* labor :

- CXVI. Head above brim.
- CXVII. Child naturally expelled.
- CXVIII. Head presentation. Forceps.
- CXIX. Head presentation.
- CXX. Head presentation.

Convulsions *after* labor :

- CXXI. Easy, natural labor.
- CXXII. Labor quite natural.

Among the 16 cases thus presented by Dr. John Ramsbotham, it is most probable, though not of course certain, that there was no case of transverse presentation.

Dr. J. T. Ingleby ("Obstetric Medicine," London, pp. 44-59) gives brief details of 34 cases of convulsions, which he has grouped together as follows, and of which it may be presumed he would have mentioned any transverse presentation, had one occurred.

Group 1. 8 cases of convulsions occurring during pregnancy, previous to labor :

- Case 1. Head presentation.
- " 2. Rigid os. No mention of presentation.
- " 3. Delivered of a living child.
- " 4. Labor pains came on naturally. Seventh month.
- " 5. Labor ensued at ninth month.
- " 6. Died undelivered at seventh. *Sectio cadav.* : "Uterus and its contents in a natural state."
- " 7. Os uteri easily admitted two fingers: then three.
"Passage of hand into uterus difficult, otherwise delivery could not have been more easily or speedily accomplished."

Case 8. Labor occurred and she was shortly delivered of a living child.

Group 2. Five cases of convulsions before labor, terminating in delivery.

Case 9. Os relaxed ; membranes ruptured, and patient soon delivered.

" 10. "*As coma became more profound,*" turning was accomplished.

" 11. Twins. Children expelled by natural efforts.

" 12. "She was delivered of twins."

" 13. Labor pains commenced and terminated in delivery of a dead child.

Group 3. Convulsions occurring during dilatation of os uteri.

Case 14. Perforator and crotchet used.

" 15. Speedily and safely delivered by natural pains.

" 16. In all respects the same as the last.

" 17. Forceps used.

" 18. Artificial delivery. No mention of presentation.

" 19. No mention of presentation.

" 20. Forceps when os dilated.

Group 4. Convulsions arising after full dilatation of os uteri.

Case 21. Head. Forceps.

" 22. Safely delivered. No mention.

" 23. Head. Forceps.

" 24. Head. Forceps.

" 25. Forceps.

Group 5. Convulsions arising after birth of *child* and before birth of *placenta*.

Cases 26, 27, 28. No mention or suggestion of presentation.

Group 6. Convulsions arising after delivery of secundines.

Cases 29, 30, 31. No mention as to presentation.

Case 32. Natural labor.

" 33. Natural and easy labor.

Cases 34, 35. No mention.

Of these 35 cases, Nos. 7 and 10, it appears, were delivered by version, but the reason given for the operation in No. 10, viz., because coma became more profound, would indicate that it was done to hasten delivery *only*, and *not* on account of transverse presentation.

Dr. Robt. Dunn, F.R.C.S., reports ("Obstet. Trans." London,

vol. I., p. 280) 4,049 cases of midwifery observed in private practice from 1831-1850, but of these 228 were premature, or abortions. How many were abortions and how many "premature" is not stated. Eclampsia was met with only four times. Of these "the attack in one instance did not supervene until after the birth of the child and expulsion of the afterbirth. In the other cases the forceps were used and craniotomy practised." Thus they were probably all head presentations; at least no mention is made of a transverse one.

In a most valuable collection of cases of puerperal convulsions, no less than two hundred and ninety-seven in number, published by Dr. John W. Richardson, of Tennessee (*Nashville Journ. of Med. and Surg.* 1872, vol. X., N. S., p. 28), it is unfortunate that no mention is made of the presentation or mode of delivery, except in a very few. And while no mention is made of transverse presentation, I am sorry to have to leave out this valuable collection from our list of figures. Excluding them, therefore, let us see how many cases of labor we have now put together. They are as follows:

Dublin Hospital (Drs. Collins, Clarke and Labatt),	48,397
Guy's Hospital,	7,404
Vienna Hospital,	134,345
Dr. Dunn's obstetric cases, <i>excluding</i> the 228 "abortions or premature labors,"	3,872
Total labors,	194,018

Now, if we add together the several collections of eclampsia cases previously cited, viz., Francis H. Ramsbotham's 59; John Ramsbotham's 16; Dr. Merriman's 48; Dr. Lee's 54; Dr. Ingleby's 35, it gives us a total of 212 cases, and this number, allowing one eclampsia case for every 500 labors, would represent 106,000 labors. Adding this number, 106,000, to the 194,018 labors obtained above, gives us a total of 300,018 labor cases, with only *one distinctly stated* instance of the coincident occurrence of puerperal eclampsia with transverse presentation *during labor*. With regard to this one case, we have no concise or particular account, which is unfortunate, for a case so extremely unique ought to be submitted to a most searching cross-examination, both with a view of detecting any possible error in the record, and more particularly in order to find out any exceptional conditions in the case itself, by which the rare occurrences

observed might be accounted for. Nothing short of a carefully conducted autopsy could render the examination of such a case complete, for there may have been (which indeed is not very uncommon) an anatomical variation in the position and division of the aorta or its branches, or a variation in the number of the vertebræ, etc.

I do not desire, however, to lay any great stress upon these possibilities; as will at once appear when I confess, and proceed to explain that the clinical proof of my theory, afforded by the foregoing figures, and others might be added, as well as by the quoted statements of the several writers alluded to, really amounts to very little or nothing. In fact, having built up this apparent bulwark of clinical evidence, I must next proceed, as fairness demands, to batter it down, if possible. I think it was Sidney Smith who said: "There is nothing so uncertain as figures, except facts," by which I suppose he means to imply that alleged facts are often found to be otherwise, as figures may be construed to prove almost anything. Since puerperal eclampsia—so say the books—only occurs once in about 500 labors, and since transverse presentation during labor only occurs once in about 230 labors, it would require, excluding any causal relation between the two, 230 times 500 deliveries, viz., 115,000 cases, to produce a single instance of the *coincidence* of a transverse presentation during labor with eclampsia. No wonder, then, that the masters of the Dublin Lying-in Hospital did not meet with such a case in their 48,397 labors; and no wonder that the general practitioner states that the coincidence is extremely rare, for who of us attends 115,000 labor cases? But though the evidence thus presented may go for little or nothing, it must be remembered that it only refers to the coincidence of eclampsia with *transverse presentation during labor*. The real question we are considering is: Whether eclampsia occurs (and, if so, with what frequency) when the child remains oblique, and in the dorso-anterior position, above the pelvic brim *during pregnancy*. That is to say: Given a thousand women in whom this normal (or what I call normal) attitude of the fetus is maintained until approaching full term, and another thousand in which the child presents by the head (face or breech), the presenting part descending into the pelvic cavity two or three months before the full term, in which thousand will the renal troubles, eclampsia, etc., occur most often? Now while, as al-

ready stated, a clinical record of the first thousand is difficult to obtain on account of the necessary examinations not being made, because the women suffer no ills requiring a physician, yet it is very well known that the oblique position of the fetus is the rule in multiparæ (in whom eclampsia, etc., are less apt to occur), and some lateral obliquity of the uterus and consequently of the fetus (the fundus being usually to the right of the lumbar vertebræ) is so common as to be almost universally recognized as a normal condition, and many theoretical explanations have been adduced to account for it. If now we ask ourselves why a *decidedly* oblique position of the child, with its head resting upon one of the iliac fossæ, is *not* admitted to be the normal attitude during pregnancy, in primiparæ and multiparæ alike, the reasons seem to be wanting, if we except the one statement that such presentations are more apt than others to result in transverse presentations *during labor*. But this last is a rare departure from the normal course of things: ordinarily the oblique presentation *does* "right itself," and bring the long axis of the child in line with the pelvic axis. As before stated, the normal attitude of the child during pregnancy *ought* to be not only different, but opposite to the normal attitude during labor, for the natural purposes of the two periods respectively, viz., *retention* of the ovum and *expulsion* of it, are directly opposite to each other.

I do not think there is at present on record any direct clinical evidence touching the relation of renal troubles, etc., with oblique presentations *during pregnancy* other than that deducible from the occurrence of transverse presentations during *labor*, in the very large majority of which last (though not absolutely in all) it may be inferred the child was oblique before labor set in. There is ample authority for the statement that exceptionally, owing to the irregular contraction of the uterus, etc., a head presentation during pregnancy may be converted into a transverse (oblique) one during labor; such cases have been occasionally observed.

While, however, clinical data on the point in question may at present be wanting, we cannot help but remark that the condition of the woman's nervous system, as regards its so-called "convulsibility," appears to be peculiarly *unexcitable* in transverse labor cases, as is evident from the violent manipulations and operations to which the women may be subjected without

provoking eclamptic seizures, as already noted in the cases quoted from Dr. Francis H. Ramsbotham (see p. 350) and Dr. Lee (p. 352). It would seem that the peculiar irritability of the nervous system, which, during pregnancy, predisposes to spasmodic seizures, must have been totally absent in these cases; and which is probably to be referred to absence of aortic and venacaval compression as previously explained (see p. 239).

In looking through the journal literature of the "Index Catalogue of the Library of the Surgeon-General's office, U. S. Army," under the caption of "Labor Complicated with Transverse Presentations," with a view to discover cases associated with eclampsia, the research embracing over three hundred journal articles (one hundred and sixteen of which I have read with care, and the others by title only), each reporting from one or two to six, eight, or ten cases, I have found only one in which renal disease, albuminuria, eclampsia, and shoulder (transverse) presentation during labor co-existed. This case occurred in the service of Prof. Isaac E. Taylor, of New York, at the Bellevue Hospital. It is reported in the *Amer. Med. Times*, N. Y., Dec. 1st, 1860, p. 382, and is in many respects so interesting, as well as rare, as to deserve special examination, though it is to be regretted that the record is in some particulars less complete than could be desired. Dr. Taylor has kindly sent me, recently, the following brief transcript of the case from the hospital record:

Name of mother, Bridget West; name of father, unknown; nativity, Ireland; single; age 28; number of pregnancies, first; date of last menstruation, Sept. 15th; date of commencement of labor, May 31st, 1860, 6 A.M.; presentation scapula; child turned, died; mother died of uremic convulsions four days afterwards; date and hour of termination, June 1st, 4:30 P.M.; first stage, $24\frac{1}{2}$ hours; second stage, 10 hours; third stage, 15 minutes; number of child, 1; sex, male; weight, 8 lbs.; stillborn.

The published report of the case in the *Am. Med. Times* contains other points of interest, to wit: On admission the patient could "not see out of her left eye, and has not had the use of her left leg for some time." The muscles of left arm are partially paralyzed, so that she carries it in a semiflexed position. Sensation on left side of body unimpaired. These motor troubles are explained by the revelations of the autopsy, to wit: "On section of the substance of the brain no fluid was found in the substance of the ventricles. The *optic thalamus* and the *corpora quadrigemina* of the right side were decidedly softened. Vessels over both hemispheres tinged with blood. Slight

subarachnoid effusion. On the upper posterior portions of the posterior lobes there was found a subarachnoid clot (each clot about the size of a half-dollar) pressing slightly upon the substance of the brain. Kidneys of normal size, fatty, and somewhat granular. Laceration of cervix uteri two inches long.

The patient, on admission, was of rather pale complexion, with marked edema of lower extremities. Convulsions first *began* one hour *after* delivery, the labor being $34\frac{1}{2}$ hours' duration. Urine at *this time* (no record of its *previous* examination) highly albuminous, scanty, and high-colored. Urine continued albuminous, though in a less degree, until death of patient on fourth day.

Now, while this case presents the coincidence of albuminuria and eclampsia with transverse presentation during *labor*, there still remains a doubt as to whether the child was transverse or oblique during *pregnancy* before labor began. In fact, we find in the record some circumstances which of themselves suggest the probability, or at least possibility, of the presentation having *become* transverse during *labor*. First we note that the patient was partially hemiplegic on left side for *some time* before labor began, while the autopsy revealed *decided softening* of those parts of the brain by which left hemiplegia would be produced. It may well be asked whether such a functional derangement of the motor powers would produce irregularity or onesidedness in the uterine contractions and bearing-down efforts, and thus lead to displacement of the child from its original position.

Labor began at 6 A.M., May 31st. First vaginal examination at 7:30 A.M., found dilatation of os had begun; soft parts in good condition; pains pretty good. No mention of presentation. Os not fully dilated till 4 P.M.; she then had a few bearing-down pains, when *suddenly they ceased*. Examination *at this time*, externally and per vaginam, led to the conclusion that the position was an unnatural one, but as there was no engagement of the fetus, and as *the bag of waters remained intact*, the exact diagnosis could not be made. She continued in this condition, and spent a good night, sleeping quietly till 4 A.M. (June 1st), when she had a return of her pains, which, however, were so slight that when Dr. Taylor saw her again at 1:30 P.M. she was walking about the ward. Dr. T. now made out a presentation of the scapula. As the bag of waters was still intact, Dr. Taylor deemed it best to try first version by external manipulation. Several efforts were made to lift the head from the *hypogastric* region and bring it down. These attempts repeatedly failed, even with chloroform. On resorting to version by internal method, Dr. T. felt what he thought was a hand and foot. He

brought down the left hand, the palm of which looked downwards and towards the mother's left thigh. Carrying the hand to the fundus, the left foot was brought down, and delivery completed at 4:30 P.M. She remained comfortable about an hour, when convulsions came on, and were repeated every hour or two during the night, etc. (See *Americ. Med. Times.*)

Such are the items of interest from the published record. I must call attention to the circumstance that no suspicion of a transverse presentation was recorded after the first examination at 7.30 A.M., and not until after the bearing-down efforts had *suddenly ceased* at 4 P.M., the bag of waters *not* being ruptured and the os uteri fully dilated. It is curious, also, that the head is recorded to have been in the *hypogastric region*, instead of in an iliac fossa. Can it be that the case was originally a head presentation, and that the shoulder was forced down during labor—the head partially receding—when the pains suddenly ceased? That the pains frequently cease in cross-births *after* the rupture of the membranes is fully understood, but that they should do so with the os fully dilated, and *without* rupture of the sac, is not so easily explicable. That the shoulder presented when Dr. Taylor felt the scapula at 4.30 P.M., May 31st, after the labor had gone on ten hours, cannot be doubted; but that it presented *originally*, or that the child was transverse during pregnancy, *must*, under the circumstances, *ever* remain in doubt. In contracted pelvis, cases have been observed (Denman) in which, on examination, the head was found presenting, while on subsequent examination the arm was discovered presenting, the head having receded. However, not to prolong the discussion of this case, it may be fairly stated that *evidence in proof of the child having been transverse before labor began is wanting*, and cannot now be supplied.

Of the other case reported in the statistics of the Vienna Hospital I have no particulars whatever. In any future cases of the occurrence of this rare coincidence, it may be hoped all sources of error will be eliminated by a complete history of the case during pregnancy, and, in case of an autopsy, that search be made for anomalous variation in the division of the aorta and in the distribution of its branches. In Quain's "Anatomy of the Arteries" (London, 1844, p. 415), we find the following abstract, giving the *place of division* of the abdominal aorta in 196 bodies examined:

The division occurred on the	{ above the middle, 1 }	6
third vertebra (lumbar) :	{ on " " 2 }	
	{ below " " 3 }	
The division occurred between the third and fourth vertebra,	.	12
The division occurred on the	{ above the middle, . 43 }	126
fourth vertebra :	{ on the middle, or nearly so, 36 }	
	{ below the middle, . 47 }	
The division occurred between the fourth and fifth vertebra,	.	30
The division occurred on	{ above the middle, 21 }	22
the fifth vertebra :	{ below " " 1 }	
		196

Hence it is evident that in considering the question of uterine pressure upon the aorta and its branches we cannot assume, as is usually done, that this blood-vessel is always located and divided in the same place, and every autopsy (in cases dying of eclampsia) which essays to be complete must include an examination of this matter. Dr. Quain further tells us (p. 417) that the end of the aorta, instead of being always to the left of the median line of the body, is "frequently observed lying on the middle of the bone, without any deviation to either side, and in a few instances it was inclined to the right of that point." This also, in considering the theory of uterine pressure, should receive attention in post-mortem examinations.

Leaving it, therefore, for future clinical observations to determine whether the uremia, eclampsia, etc., of pregnancy will occur when the child remains oblique and above the brim *during pregnancy*, it may here be further remarked that observations as to the position of the fetus during the several months of pregnancy, and as to the frequency of eclampsia during the several months, show a remarkable synchronism between eclampsia and *unoblique* positions of the child. Thus cases of eclampsia are exceedingly rare before the sixth month of pregnancy, and are more and more likely to occur during the several succeeding months ; so we find from the results of observations made by Dubois at the Maternity Hospital of Paris "that the position (presentation ?) of the fetus, with the head lowest and over the os uteri does not begin to be assumed till about the end of the sixth month, and that it is taken up with increasing fre-

quency and certainty from that period onwards to the full term of pregnancy." (Leishman's "System of Medicine," Third Am. ed., 1879, p. 128.)

To this statement I may add that during the first few months of pregnancy the uterine walls are (comparatively) solid and inelastic, while the fetus is soft; but there comes a time later on—beginning about the sixth or seventh month—when the solidity and inelasticity of the fetus increase, while the womb loses these qualities and becomes soft, supple, and elastic to such a degree that the formerly soft embryo is now sufficiently solid to give shape and position to the uterine cavity surrounding it, when, and still more so as pregnancy advances, the posture of the fetus becomes susceptible of change by forcible impressions made upon the exterior of the abdomen by corsets, dress, etc. And thus it would appear the normally "transverse" (really oblique) position of the fetus is more likely to be disturbed by these external impressions after the sixth month, and hence the greater liability to albuminuria, eclampsia, etc., after that time.

As relevant to the *causes* of the normal attitude of the fetus in utero, about which there has been so much discussion and difference of opinion by Dubois, Simpson, Scanzoni, Duncan, and others, it may be of interest here to observe that the matter will be at once simplified, and the inquiry substantially changed, when we recognize the oblique position as being normal, and the presentation of a head as an abnormal deviation produced by external factors, for then the gravitation theory will not be so easily called in question, inasmuch as Dubois ascertained by plunging the fetus in water and suspending it by the funis, that it was *not the head*, but the *scapula* or *back* which hung downwards and first touched the bottom of the vessel (Leishman, p. 126). Thus while the fetus floats during the early months, it would gravitate (the woman being erect) into an oblique or shoulder "presentation," the "position" being dorso-anterior, and it is probable this early posture, in the absence of disturbing influences from without, would persist during the later part of gestation, or until within a few days of delivery.

21. *Treatment Deducible from the New Theory.*—If the theoretical views now presented be true, the treatment deducible from them will be easily reached. To prevent albuminuria, nephritis, etc., during pregnancy, the causes interfering with normal obliquity of the child (viz., corsets, coitus, etc.) must be

removed or forbidden. After the third or fourth month, when the womb begins to rise out of the pelvic cavity, every impediment to its assuming its normal oblique position should be, even thus early, interdicted: and so with every influence likely to (as Dr. Barnes puts it) "drive" or "force" the womb down into the pelvic cavity, whether during the "last three months" or the preceding three. Everything likely to disturb the (as already described) nicely adjusted balance between the forces determining the ascent and descent of the pregnant womb must be avoided or removed. (See pages 241, 242.)

When, on examination during the later months, the womb and child are found *unoblique* and forced prematurely into the pelvic cavity, the faulty position must be remedied. To do this, I should be inclined to recommend complete anesthesia to relax the abdominal wall, and then bipolar manipulation, lifting the lower segment of the womb and child out of the pelvic cavity and towards that iliac fossa opposite to the side on which there still remains a slight deviation of the fundus (such will usually be the case) with one hand, and with the other assist the fundus to get *more decidedly* on the *side* of the lumbar vertebræ. Placing the woman continuously, for a few days perhaps, in the latero-prone position and on her right side, the hips elevated on pillows, or for a short time in the genu-pectoral position, might accomplish the result, even without manipulation per vaginam.

Should the worst have almost come to the worst, with pronounced albuminuria, nephritis, and even eclampsia, there would still be substantial hope that the alarming phenomena would disappear by replacing child and womb obliquely above the brim, thus relieving renal congestion and cerebral arterial tension, as well as the "uterine irritation" of a prematurely distended cervix, etc. Whether the desired replacement will be accomplished by posture alone, or by manipulation alone, or by both combined, future clinical experience must determine.

Fortunately, however, we are not even now entirely lacking in clinical demonstration of the methods suggested and their utility.

Dr. Barnes ("Syst. of Obstet.," p. 301-302), under the caption of "Postural Treatment" of puerperal convulsions, tells us that "Graily Hewitt and Routh, believing that the disturbances of the abdominal and renal circulation, caused by pressure of

the gravid uterus, exercised a powerful influence in provoking eclampsia, placed the patient in such a position as to diminish this pressure. Routh had seen marvellous benefit from the knee-elbow posture." Dr. Barnes only adds on this matter the following brief comment : " It must often be difficult to adopt this posture ; but the side or semi-prone posture may be tried." This brevity is perhaps to be accounted for by the circumstance that he does not believe in the " pressure theory " of eclampsia, etc., but refers them more directly to " changes in the blood." I have not been able to find any record of Hewitt and Routh's observations, except that of one case by Dr. Routh (*Brit. Gynec. Journ.*, vol. I., p. 315) mentioned by him before the Brit. Gynecological Society during a discussion in which he said " he had already mentioned elsewhere (reference not given) a case of *long* and *continued* eclampsia, in which the prolapsed cord had slipped out, but the moment he placed the woman on her belly (?) to induce its resuming its normal position, the fits stopped and did not recur. He explained this by the removal of pressure, and Dr. Bantock had also noticed that large fibroids of the uterus had induced albuminuria which at once disappeared on removal of the tumor, from the cessation of pressure, as he (Dr. Bantock) also believed." In a subsequent discussion before the same Society (Part V. of *Journal*, May, 1886, p. 38) Dr. Routh again mentioned this case, saying : " It was a shocking case to look at, and had resisted treatment. When being about to deliver by forceps,¹ the cord prolapsed. He placed her on her belly to allow reduction of the cord, after Dr. Simpson's method. The cord was reduced, and the convulsions at once ceased, the pressure being thus removed from the *kidneys*" (?). No comment appears to have been made by the Society on Dr. Routh's observation. Dr. Bantock's observations (mentioned by Routh) refer to a case of fibroid tumor in which there was pronounced albuminuria and general anasarca. Within twelve hours after removal of the tumor there remained only a trace of albumin, and within three days the anasarca had disappeared. In a case of ovarian tumor, the albuminuria disappeared even after a preliminary tapping (*Brit. Gynec. Journ.*, vol. I., p. 314).

With relation to Dr. Routh's case, it is scarcely possible to agree with him in the remark that the immediate cessation of

¹ It was, therefore, presumably, a head presentation.

the fits was due to removing pressure *from the kidneys*. Uremic contamination of the blood could not have been so rapidly relieved. I should rather believe the convulsions ceased because removal of pressure from the aorta and vena cava at once relieved tension of the cerebral arteries, and allowed the normal proportions of venous and arterial blood in the brain to be reinstated. (See caption 17, p. 239). And again, the genu-pectoral position relieved the distended cervix and os uteri from the pressure of the presenting head, thus removing a peripheral excitor of the eclamptic paroxysms.

Dr. Lusk ("Sci. and Art of Mid.," p. 571) remarks that "Löhle recommends placing the woman in the latero-prone position, in order to diminish as much as possible the pressure upon the *ureters* and upon the *renal veins*" (?). Dr. Lusk makes no farther comment on this method.

Dr. Aveling (on "Posture in Gynecic and Obst. Pract.," p. 132) states that the postural treatment of convulsions may be preventive or curative, and both ends are to be obtained in the same manner. He recommends that patients during gestation, suffering from albuminuria, should not remain upright longer than necessary. "When convulsions have arrived, and parturition cannot be completed, such posture should be recommended as will remove the uterine pressure. The semi-prone position, with the hips raised, would be the best." He, however, gives no clinical data, farther than to refer to the case published by Dr. Brown-Séquard, and of which also Dr. Bedford says: "Dr. Brown-Séquard has positively ascertained the influence of pressure upon the renal vessels in a lady who had albumin in her urine during the ninth month of pregnancy. He placed her in such a position that the pressure was much diminished, and after a certain time the urine ceased to contain albumin. When the ordinary attitude was resumed, there was soon a reappearance of albumin in the urine." (Bedford's "Obstet.," 3d ed., 1867, p. 508). I cannot assent to the relief being due to removal of pressure upon the renal blood-vessels, as I have already explained. But no matter about this: for, if placing the woman in a posture that will divert uterine pressure from the spinal column towards the abdominal wall, and from the pelvic cavity towards the diaphragm, *will relieve the renal trouble*; that is what we require.

If it be objected that placing the woman in the genu-pectoral position, when eclampsia occurs during labor, would cause the

presenting part to recede and thus retard the delivery, it may be replied that the temporary maintenance of this posture, say for an hour or two, or even longer, if necessary, might so far restore the normal proportion of venous and arterial blood in the nerve centres as to reduce the "convulsibility" of the nervous system, and permit of speedy delivery by podalic version, the patient being *now* able to bear the necessary manipulation without an eclampsic fit being excited. Moreover, the peripheral excitor of the convulsion—pressure of the os and cervix uteri—would be relieved. Furthermore, most cases of eclampsia during labor are to some extent *premature* labors. If, therefore, the genu-pectoral posture should postpone delivery (the waters remaining intact), so much the better, provided the complication of eclampsia and renal trouble were removed.

22. *Evidence conflicting with the theory.*—On this point it may be said, *first*: that while head presentation, with (in primiparæ) descent of the head below the pelvic brim "three months" before full term, is so common as to be recognized as the *usual* condition (see Lusk's "Sci. and Art Mid.," 3d Am. ed., pp. 84, 91; and Barnes' "Syst. of Obstet.," 1st Am. ed., 1886, p. 200, 201), yet renal troubles, albuminuria, uremia, and eclampsia are comparatively *rare*. To this statement we may reply that, in all pathological conditions, the factors or causes of disease exert their deleterious effects in *different degrees*. Nature is adequate, in many instances, to contend against, compete with, and outvie the evil by compensative processes. And again in some, perhaps many cases, the (what I call) abnormal position of the child may, owing perhaps to large size of the pelvis or other unknown circumstances, occur and be tolerated without material ill effects, or only with moderate functional derangement; while in others the worst results are produced. Thus we find albuminuria, etc., during pregnancy, in all shades of degree. We find it to appear and disappear—to come and go—just as might be expected from movement of the uterus, or active motions of the child, or change of posture of the patient, these changes altering the degree of pressure made upon neighboring blood-vessels. I have nowhere contended that want of fetal obliquity and the occurrence of descent of the head will *always* lead to renal trouble; but rather that, when the child remains obliquely above the brim, etc., renal troubles etc., will *not* occur.

Secondly: It may be objected that when albuminuria and uremia have occurred, they are often relieved by medicinal and other remedies while the position of the womb and fetus still remains unchanged. This is undoubtedly true. But, on the other hand, we recognize in these methods of treatment compensative processes by which the evil has been mitigated and perhaps the epoch of severer danger postponed. Surely there are other cases in which such compensative measures utterly fail, and premature labor, with death of child and mother, occur in spite of treatment. Furthermore, who shall say that restoration of the child and womb to their normal (?) position would not be a more speedy and preferable method of treatment than prolonged medication with violent drugs? If the genu-pectoral posture will relieve immediately, it should be practised, and the drugs be discarded.

Thirdly: It is often alleged that eclampsia, etc., occurs with more frequency in *narrow pelves*, in which there is also a greater frequency of *transverse presentation*. I reply that this refers to transverse presentation during *labor*. Narrow pelves are exactly those cases in which head presentations *before* labor are liable to change to oblique ones *during* labor. Moreover, it may still be questioned whether the statement that eclampsia and contracted pelves are frequently coincident be really true. We need further information on this point. Otto Spiegelberg states ("Trans. Am. Gynec. Soc.," vol. II., p. 165) that "eclampsia is remarkably frequent in twin pregnancies, although it has been *proved* by statistics *not* to be so in hydramnios, or with *narrow pelves*" (Spiegelberg quotes from Löhlein, in the *Zeitschrift f. Geburtshülfe u. Frauenkrankheiten*, I., 1875, p. 64).

Fourthly: The theory I have presented fails to explain the occurrence of uremia, eclampsia, etc., in the early months of pregnancy, as well as the cases of eclampsia that occur after delivery, unless we conceive, with respect to the latter, which is not unreasonable, that the ordeal of a long labor, coupled perhaps with laceration of the cervix or other soft parts, and with exhaustion or hemorrhage, were, to speak figuratively, last straws on the camel's back, by which the final overthrow of the nervous system into an eclamptic paroxysm, was brought about. The convulsion, it should be remembered, is often one of the

final phenomena—the last link in the chain of a long series of antecedent pathological conditions.

23. *Conclusion:* Fully aware that the views I have maintained are, in the main, theoretical, and that they require clinical evidence to prove or disprove them, I hope the subject has been presented in such a manner as will lead to new lines of research which may end in some practical good. Especially is it desirable that we should study again, and, if necessary, reconstruct our ideas of what constitutes the normal attitude of the infant during the later months of pregnancy. I cannot dismiss the idea that the recognition of an oblique, dorso-anterior position above the pelvic brim, during the later months, as the truly *physiological attitude* for both primiparæ and multiparæ will open a door for the philosophical explanation of phenomena that have hitherto been puzzling and inexplicable both in the domain of pathology and physiology.

In conclusion, I beg to acknowledge my indebtedness to the library of the Surgeon-General's office, U. S. Army, for the facilities for research it has afforded me in the preparation of this paper; and it gives me pleasure to tender my most cordial thanks to the kindly assistance given me by Drs. J. S. Billings and Robert Fletcher, of the Surgeon-General's office, as well as by Dr. Thos. W. Wise and his assistants in the library. I must also tender my thanks to Dr. Thomas J. Chew, of the "Washington Asylum;" to Dr. P. J. Murphy, of the "Columbia Hospital," of this city; and to Prof. Thos. Opie and his assistants, Drs. L. F. Ankrum and W. P. Spratling, Jr., of the "Maryland Lying-in-Asylum," for their kind assistance.

A CONTRIBUTION TO THE MECHANISM OF DESCENT AND FLEXION IN VERTEX PRESENTATIONS.

BY

EDWARD REYNOLDS, M.D.,
Boston, Mass.

IN the mechanism of descent and flexion in vertex presentations, there are three points which are very unsatisfactorily dealt with in the text-books and other literature of the subject.

These are: the method by which flexion is produced, in the presence of a normal or excessive amount of liquor amnii; the causation of descent behind the unbroken membranes; and the mechanism of descent and flexion in those cases in which the head enters the pelvis, in a state of flexion, during the last few weeks of pregnancy and before the advent of true labor.

An attempt to clear up the obscurity which surrounds these questions is the object of this paper.

FLEXION.

In the mechanism of flexion, it is generally admitted that, if descent be due to the force of direct contact between the breech and fundus, flexion is explained by the transmission of the greater part of that force through the vertebral column to the condyles of the occiput, but the occurrence of flexion in cases where such contact is impossible has hitherto met with no satisfactory explanation.¹

¹ Certain authorities explain the occurrence of flexion, in cases where direct contact is impossible, by the statement that "as the pressure is proportional to the height of the fluid, in the case of partial flexion, the force directed against the occiput is greater than that exerted upon the frontal end of the head." That this position is utterly untenable is shown by these facts: that the pressure does not vary in this way except in so far as the influence of gravity upon the liquor amnii is concerned; that the maximum difference due to this cause can never exceed half an ounce to the square inch, a force hardly sufficient to overcome friction, in the case of a body subjected to the great pressure of the contracting uterus; and that this excess of pressure, slight as it is, is exerted against the part which is lowest in a vertical line and not necessarily upon that which is the more deeply engaged in the parturient canal.

Thus: in an O. L. A. position, with the woman upon her back, the excess of the force, such as it is, is directed against the forehead and not against the occiput.

If now it can be shown that the general fluid pressure of the liquor amnii is concentrated upon the condyles of the occiput in a precisely similar manner, we have reached an explanation which accounts for the occurrence of flexion in all cases of labor.

To prove that this concentration occurs, let the condition of the fetus at the beginning of labor be represented by Figure 1, remembering that it is surrounded upon all sides by the liquor amnii. Let A, A', B, B', C, C', etc., represent the sum of the

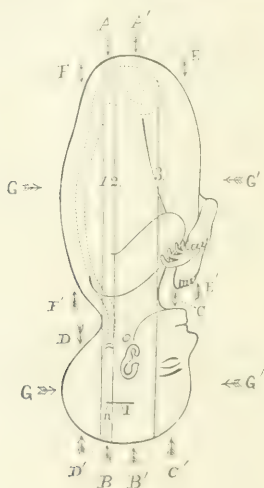


FIG. 1.

uterine forces transmitted by the liquor amnii to the superficial areas opposite which they are placed. Let the lines 1, 2, and 3 represent planes passed through the occipito-atlantoid articulation (σ) and the anterior and posterior points of junction between the head and body, parallel to the long axis of the fetus. Let n and l represent the perpendicular distance from σ to the centres of the areas subtended by B and B' respectively. Then $C=C'$, $D=D'$, $E=E'$, $F=F'$, $G=G'$, and these resistances be-

¹ If a solid body be immersed in fluid in a closed vessel and subjected to pressure, the sum of the forces exerted upon it in any given direction is equal to the sum of the forces exerted in the opposite direction.

ing opposite and equal, and moreover transmitted directly to each other at all points, produce no tendency to motion.

Similarly $A + A' = B + B'$, but, owing to the superiority in the consistency of the vertebral column over that of the soft parts of the fetus, these forces, though opposite and equal, are transmitted to each other only by the vertebral column and the occipito-atlantoid articulation; and, therefore, though no motion of the fetus as a whole can result from their activity, motion of its parts about the fulcrum at o not only can, but must take place, for the resultant of $B = B \times n^1$ and that of $B' = B' \times l$; but now, as the pressure is equal at all points,² and as the surface at B' is greater than at B , B' is greater than B ; also l is greater than n , therefore $B' \times l$ is greater than $B \times n$; therefore, since the greater force must prevail, the effect of the general fluid pressure is that the head tends to become flexed upon the chest.

Or, to use simpler though less precise language, the fetus being subjected to equal and opposite longitudinal pressures, transmitted to each other mainly through the occipito-atlantoid articulation, the force applied to the forehead acts at a mechanical advantage over that exerted against the occiput, and the result is a tendency to flexion—a tendency which becomes more marked in proportion as the pains become stronger.

This, I think, explains the causation of the preliminary flexion which is observed to take place at the beginning of labor before descent has occurred.

A similar argument shows that, owing to the eccentric position of the vertebral column, the same cause produces a flexion of the body upon itself in a forward direction. This movement is, however, self-limited by the fact that, so soon as the body is bent to a degree which shortens the long diameter of the abdominal cavity, no further flexion can occur without lateral bulging of the abdominal walls, which is prevented by the lateral fluid pressure.

Thus we see that, under the influence of the fluid pressure

¹ We are justified in considering that the forces B and B' act on the ends of the lever $n l$, with the fulcrum at o , because the effect of a force is the same, whether it be evenly distributed over a given surface or concentrated at its centre.

² If a fluid be contained in a closed vessel and subjected to pressure, the pressure is transmitted equally in all directions, and to all points.

alone, the fetus tends to assume the most compact form possible, *i. e.*, with the body bent and the head flexed.

The mechanism which governs the further production of flexion during the second stage is almost exactly similar to that which causes this preliminary flexion. Thus if we examine the conditions which exist, after this preliminary flexion has been effected, after the head has engaged, and the membranes have ruptured, we find them to be as follows: the restraining force is now the resistance of the pelvic walls or os, applied at R and R' (Fig. 2), while the propelling force remains as before, con-

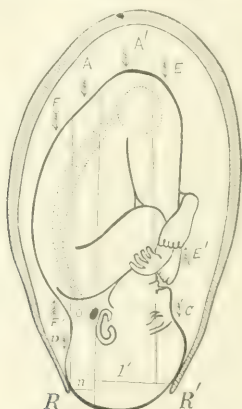


FIG. 2.

centrated for the most part upon the occiput,¹ which must therefore be the first to descend, by overcoming the resultant $R \times n'$, while the forehead is detained by the greater resistance $R' \times l'$. The effect of the irregular shape of the fetal head as described by Galabin undoubtedly acting as an auxiliary cause.

Flexion, then, is explained for all cases by the fact that the force applied to the breech is transmitted mainly to the occipital end of the head, whether it be the force of direct contact or that of fluid pressure. It must also be remembered that whenever the force of gravity is an assisting cause of flexion, the weight of the whole body is exerted against the condyles.

¹ The force $D + A + A'$ is exerted against the occipital end of the head, while the sinciput is propelled only by the force C.

DESCENT.

On considering the mechanism of descent, we find that in the ordinary course of labor the os becomes considerably dilated before descent begins, that after the os is tolerably well dilated, the membranes rupture; the head then settles down against the os, driven by the pressure of the fluid behind it, and the presenting segment being then no longer subjected to the intrauterine pressure, and opposed only by the resistances of the parturient canal, descent begins under the driving force of the uterine fluid pressure behind.

This may be called the normal mechanism of descent. There are other cases, however, in which no such timely rupture occurs, but in which the membranes remain intact until late in labor.

In these cases, after a longer or shorter period of delay, the head advances to a point at which it rests against the os, and by a ball-valve action, cuts off the connection between the "fore-waters" and the uterine cavity; the presenting segment is then no longer exposed to the increased intrauterine pressure during the pains, and descent therefore goes on, much as though the membranes had broken. The degree of descent necessary for this "cutting off of the fore-waters" varies in different cases from a mere passage of the superior strait to complete descent even to the perineum, according to the varying dilatability of the os and size of the head.

It is only with this preliminary descent, previous to the "cutting off of the fore-waters," that this paper is concerned.

It is generally admitted that, until the membranes have ruptured, the contractions of the uterus act upon the ovum as a whole; but, I think, the corollary to this proposition, that during this time the fetus receives absolutely no motive impulse from the fluid medium by which it is surrounded, has not been sufficiently insisted upon.

As was said above, it is a well-known law in physics, that if a solid body be immersed in fluid and exposed to pressure, the force exerted against it in any given direction is equal to that exerted in the opposite direction, and again that, if two forces be opposite and equal, no motion can result from their activity. Now the condition of the solid body named in these laws is precisely the condition of the fetus so long as the membranes

remain unruptured and the "fore-waters" are not cut off, as is shown diagrammatically in Fig. 3, where the forces marked A are opposed by the equal and opposite forces B, and can therefore have no share in the production of descent.

It is to be remembered, however, that the fetus is still subjected to the influence of gravity (in the ordinary position of the mother), and it is certainly conceivable that, in cases of easy adaptation, the head may, under the influence of gravity

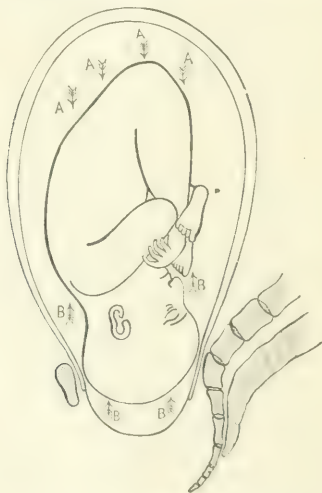


FIG. 3.

alone, settle low enough to come in contact with the os, and by a ball-valve action "cut off the fore-waters" and so bring the fluid pressure into play.

In the greater number of cases, however, the force of gravity must be powerless to overcome the resistance of the superior strait and thus effect the engagement of the head, and for these cases we must find some other explanation to account for the descent of the head.

Lahs has argued that contact between the breech and fundus can never occur in the presence of a normal amount of liquor

amni; but, with all respect for his high authority, I think it can be shown that in these cases such contact not only can, but must occur, for as the membranes emerge from the os and begin to distend the vagina, a considerable quantity of liquor amni is withdrawn from the uterine cavity by their expansion, this diminution of the uterine contents must be followed by retraction, and if thus the long axis of the uterus is shortened while the breech is held, by the arrest of the head, at its original elevation in the abdomen, contact between breech and fundus must soon occur, and the contractile force of all the longitudinal fibres of the uterus is thus concentrated upon the breech. So soon as this force has produced sufficient descent to cut off the fore-waters, the influence of the fluid pressure is brought into play and descent goes on as though rupture had occurred.

It is to be remembered, by the way, that though the force of direct contact is undoubtedly sufficient to drive a normal head through a normal inlet, it is much less powerful than the fluid pressure, since the one is produced by the contractions of the longitudinal fibres alone, while the other is due to the exertions of the uterus as a whole; a fact which explains the longer course of dry labors and labors with unbroken membranes.

DESCENT AND FLEXION BEFORE LABOR.

There remain for consideration those cases in which the head, in a state of more or less complete flexion, enters the pelvic cavity and may even proceed to the inferior strait during the latter months of pregnancy and before the advent of labor.

The mechanism of these cases is similar to those just described, with the substitution of the tonic tension of the abdominal walls for the contractions of the uterus.

Thus, if the intra-abdominal pressure be sufficiently strong, the lower segment of the uterus with a portion of the liquor amni will be urged in the direction of least resistance into the pelvic cavity, the uterus as a whole descending, while the fetus is arrested by the contact of the head with the pelvic brim. It is evident that no great advance of the uterus can take place without the occurrence of contact between the fundus and the breech; but so soon as this exists, the intra-abdominal pressure is directly transmitted to the breech, and if it be sufficiently strong will cause flexion and descent.

THE GALVANIC TREATMENT OF UTERINE FIBROIDS:
FULL TEXT OF FIRST FIFTY CASES.

BY
EPHRAIM CUTTER, M.D.,
New York.

(Concluded from p. 280.)

CASE XXX.—*Large interstitial fibroid, very much diminished at the outset; vaginal discharge of detritus; improved health and strength; able to do more work than before; flooding checked; return of disease. Operators, Kimball and Cutter.*

Mrs. C., of Woburn, Mass., a patient of Dr. Wolgamot, married for two and a half years, aged 21 years, no children, had a fibroid tumor of the uterus about five or six inches in diameter, central, interstitial, movable, rising a little beyond the umbilicus and readily felt through parietes just above the pubis. She was troubled with uterine hemorrhage to a weakening and blanching degree, also with a sense of pressure in the lower part of the abdomen, unfitting her for every kind of employment requiring bodily effort.

First operation.—Dec. 18th, 1873, the battery was applied. The electrodes were passed through parietes, one on each side. The current was continued for four minutes under chloroform. The effect of operation was not marked by any pain. In the course of a few days the patient declared that the tumor was much diminished in size. This diminution was attended with some discharge per vaginam. The characters of this evacuation were copiousness, fluidity, and blackness with detritus—not offensive nor bloody. With this she had severe chills, and was confined to bed for two weeks.

Second operation.—Feb. 18th, 1874, the battery was applied a second time. Tumor now very much lessened, “one-half at least,” in bulk. Softer and more elastic. The electrodes were entered as before, but instead of meeting the solid resistance offered at the first trial, they met with much less opposing force of the tissues, and suddenly, when passed in about half-way, the resistance ceased entirely, and the electrodes were swept about and even touched each other. The impression given to the hand was that the instruments penetrated a cavity or hollow space containing gas or fluid of little or no resistance. In other words, the tumor gave every appearance of having been broken down in its central substance into an abscess or cyst, as pus escaped to some extent through the punctures by the sides of the electrodes. The uterine hemorrhage was arrested, but the puru-

lent blackish discharges continued. The general health was improved, although she was much troubled with care and anxiety about her husband, who was in the last stages of consumption. This marital distress weighed very heavily upon her and interfered decidedly with her nutrition.

Third operation.—May 31st, 1874, Dr. Cutter applied the battery much as before. Ether used. The introduction of the electrodes was followed by purulent discharges by the side of them. There was the same feeling of a central cavity in the tumor. This operation was borne so well, and so little apparent direct result followed, that the *fourth operation* was conducted June 6th, 1874. Ether. No purulent discharge this time. The effect was profound. There was pain and tenderness over the tumor and sites of puncture. Cloths wetted in hot alcohol were kept on abdomen. Sulphate of morphia was given by subcutaneous injection. The disturbance of fever and tenderness lasted a few days and then subsided. Owing to the increasing debility of her husband, she felt that all her energies should be given to his care. For this reason the operations were conducted no further. His death occurred soon after this.

In June, 1875, she was examined and found to be in the enjoyment of a good degree of health, though not so strong as she would like. She was on the lookout for a situation as housekeeper. The tumor was certainly less than one-half its original size. She has now no uterine hemorrhage. Her menses are normal. Indeed, the patient regards herself as quite well. Soon after she engaged in employment that required bodily activity, and Dec. 19th, 1876, writes in reply to inquiries: "My health I call excellent. I think my life has been saved. I have very little trouble from that tumor. I worked three months in Wakefield attending store and millinery, losing but one day. I do a day's work nearly every day, and you will please remember I was never considered strong. I am thankful for the saving of suffering."

1877, Jan. 5th. Reports a menorrhagia. Appetite good. When not attending to millinery she is doing housework.

1877, Aug. 21st. Tumor much increased; distinct fluctuation, profuse menorrhagia. Pain severe. Patient very nervous and weak on account of hemorrhages. Gave chlorodyne, gallic acid, and strict animal diet.

September 5th, not doing well.

1878, Jan. Much improved on diet. Tumor lessened.

1879, Dec. 10th. Seen at Salem. Tumor larger than ever. Has been careless in diet and overworked.

CASE XXXI.—*Fears of malignancy not realized; one operation; disappearance of abdominal lobe; diminution of pelvic portion and subsequent slight increase; pain removed and general health good.* Operator, Cutter.

Miss D., of Marlboro, 47 years of age, presented herself Dec. 26th, 1876. Her occupation was that of housework and run-

ning a sewing machine. She was a large, imposing person with a yellowish complexion. Always suffered from menorrhagia. Her tumor had existed for four years at least. No increase had been noticed for the last six months. Always regular to within the last two years. Since then hemorrhage had been excessive and exhaustive. Pain is not severe. Backache is constant. During the past summer she had been made sick by nursing invalids. Appetite good. Constipation. Nocturnal numbness and diurnal swelling of the feet. She is extremely nervous. One lobe of the fibroid was found in the right hypogastrium, conical, as large as an orange. The os uteri was enlarged, and a large mass was found developed in the anterior wall of the uterus, hard and immovable.

One operation.—Dec. 29th, 1876, galvanism was applied at 1 p.m. Present, Drs. Kimball, Bixby, and Hanscom. Etherization effected. One electrode was passed into the pelvic portion, and the other about two and one-half inches through the abdominal lobe. Current was passed three minutes. Pulse not affected.

1877, January 1st. She has some heat, fever, tenderness of bowels, bearing-down pains, and desire to pass her urine. Sleeps well. Is able to be up and dressed; also to eat.

Jan. 3d. Uterine hemorrhage not copious. Is very nervous.

Jan. 10th. Has had a menstrual period with less hemorrhage than before, but suffered more pain and passed clots of blood. Feels weak. Is flowing still. Ordered gallic acid.

Jan. 20th. Flowing still continued, looks pale, and feels very weak. Appetite diminished. Dyspepsia. Ordered quinine.

22d. She is weak, discouraged, and suffers so much pain in pelvis that she says "she will die." The abdominal lobe is tender, but in the vagina the tumor seems less fixed, and no local mischief was found to account for the symptoms. Ordered rectal enemata of McMunn's elixir of opium. The tongue was clean, the skin cool, and the appetite moderate. Still she has lost flesh and strength. The flowing continues to a slight degree.

February 7th. Complains of terrible pain every day at 2 p.m. Has headache and bloated bowels. Pulse 84. Skin cool. Tongue moist. Vaginal hemorrhages ceased; now followed with colorless fetid discharges. Feels very weak. Thinks she shall die. Ordered gallic acid by the mouth, and persulphate of iron per vaginam for hemorrhages.

Quinine for neuralgia.

17th. Pain less, but severe. Vaginal discharge continues. Tumor is evidently smaller. Pelvic tumor more elastic. Some hard, freely-moving nodules were felt in the post-uterine cul-de-sac. Countenance and skin yellow still. Feels as if a "hole was being bored in her back."

Feb. 24th. Pain not much better. Appetite good. Been down-stairs. Less yellow.

March 20th. Feeling and appearing quite well. Has returned

to her former diet somewhat. Physical exploration fails to reveal the abdominal tumor. *It cannot be felt.* The pelvic portion is softer and more movable. It is evidently smaller, as there is now a cervix three-quarters of an inch in length where before there was an annular os.

April 21st. No sign of abdominal tumor. Pelvic tumor possibly larger. Feeling quite well and encouraged.

Sept. 11th. Complains of pain through the hip and shoulder-blades. Been keeping house for her brother. The abdominal tumor has not reappeared, the other has slightly increased, as the cervix is shorter than it was. The general size seems lessened, as there is more room in the pelvis.

1880. April 29th. In perfect health. No sign of abdominal lobe. Uterine lobe rather lessened.

Remarks.—Under the circumstances, this proved a satisfactory case. At one time it appeared to be decidedly malignant. A yellow tinge of skin with severe pain sometimes is associated with malignant disease.

CASE XXXII.—*Operator, Kimball.*

1877, February 4th. Mrs. C., Groveland, Mass., presented a dense mobile pediculated abdominal fibroid “large as a child’s head.” She was known to be four or five months advanced in pregnancy. Suffered much from pain and distress. Galvanism was applied to her for *four times*. The pain was relieved. She thought the fibroid diminished. The operations did not interfere with the pregnancy, as she has since been delivered of a living child at full term.

Remarks.—This case is noticeable as presenting a new feature, viz., complication with pregnancy and galvanism applied without regard to it. Dr. Kimball says that he acted upon the idea that no one could reasonably expect that the full term of gestation could be safely reached. If the operation induced premature delivery, it could only be doing that which would be inevitable or rather desirable. However, it is remarkable that the gestation proceeded normally notwithstanding the interference.

The writer thinks it a bold measure and interesting in connection with these histories.

CASE XXXIII.—*Operator, Kimball.*

1877, April 4th. Mrs. W., Lowell, Mass., suffered from an abdominal, pelvic, and interstitial solid fibroid tumor of the uterus, seven inches in diameter. She submitted to *several* applications of the battery in the usual way. No injury resulted. *She* thought that the tumor was diminished. This, however, is certain, that, whereas she was a terrible sufferer requiring nearly

constant medical attendance for relief, now she is as well as ever she was.

CASE XXXIV.—*Bedridden for eighteen months; general hyperesthesia and vaginismus; defecation causes fainting; effect of one application, painless defecation, ambulation, and anesthesia; in progress; return of bad symptoms, but not to so bad an extent as before. Operator, Cutter.*

1877, April 13th. Mrs. P., Malden, Mass., 35 years of age, married fourteen years; children, no abortions; a year ago was taken with terrible pains and flowing and Dr. C. W. Hackett, her physician, discovered an enlargement in her bowels at that time. She menstruated at the age of thirteen years. She always had vaginismus. In October, 1875, she measured about the waist twenty-one inches and from this date to July, 1876, she had a continuous vaginal discharge. At this time she was etherized by Dr. W. G. Wheeler, of Chelsea, in consultation. The uterus was found to be four inches in depth. Posterior wall evidently enlarged. More distinctly felt through the rectum, it presented two dense and hard nodules. In April, 1877, she measured thirty-two inches. She had lost flesh and strength by being practically bedridden for the past eighteen months. She could neither sit nor walk. She was very nervous and irritable. Could not bear the slightest touch on her back without fainting away. Her bowels were hyperesthetic. She had pains in her limbs, head, and chest. Indeed her nervous system was so deranged that all medicine disagreed and acted curiously. In proof of this, Dr. Hackett said that paregoric purged her. Every act of defecation caused her to faint away with pain. My own palpation of the abdomen and examination of her throat both set her into a violent cough and severe pain. As it was useless to attempt a thorough physical exploration without an anesthetic, arrangements were made to etherize at a future time, with the understanding that if matters were satisfactory the battery would be used.

April 19th. Inspection under ether. No tumor visible.

Palpation. Tumor felt indistinctly through the abdominal walls on account of the presence of a large amount of adipose tissue. *Per vaginam et rectum.* A trilobed, dense, and distinct growth was found attached to and incorporated with the posterior uterine wall. *Size* that of the fist. Uterus four inches in depth. Vagina contracted.

First operation.—Introduced both electrodes per rectum to the depth of two inches and distance apart of three-fourths of an inch. Current passed three minutes. The tumor was very dense and difficult to penetrate.

April 23d. Patient poorly. Severe pain in back. Headache, vomiting, and fainting. Complete disgust of all food. Slight rectal hemorrhage.

May 3d. Anesthesia when before there was hyperesthesia. Rectal pain all gone. Evacuations painless. Vagina somewhat

sore, but allowed of a digital examination which was not possible before without ether or chloroform. Tumor apparently smaller, though the abdomen measures thirty-three inches.

May 12th. She writes, "I take pleasure in telling you that I am able to walk all about the chamber, and can sit on an ordinary chair. Her physician writes, "She eats, sleeps well, for her, and is quite happy. I am joyfully surprised."

May 22d. About her house. Feeling very well indeed. Better than ever before. Vaginismus returning.

30th. Rode out in a carriage.

August 22d. Some pain in right hypogastrium.

Second operation.—September 6th. Abdominal tumor manifest, hard, central, and movable. Tumor behind the uterus seemed smaller. Etherized and passed both electrodes through rectum as before. The *growth was soft and easily penetrated*. Current passed three minutes. Present Drs. Sullivan, of Malden, Bean, of Medford, and Hackett, of Brookline.

17th. Doing well.

24th. Same anesthesia as after first application. Menorrhagia. Though stronger than after the last operation, she is unable to move about. On milk diet.

October 15th. In bed still. Using percutan galvanism. Needs another operation of the deep puncture.

Remarks.—This case is the only one in which *both* electrodes have been passed through the rectum. The result was a great surprise to those concerned. When she appeared in the street she was looked upon with astonishment as one raised from the dead.

Bad symptoms returned, though another operation was practised. In progress.

1879, Nov. 3d. Saw Mrs. P. Grown fat. Up and about the house. Menstruating. Eats animal food mostly. Abdomen enveloped in fat. Could feel no tumor. In good spirits and lively.

1886, April. By report of nurse I hear that her troubles have returned and she lives in distress.

CASE XXXV.—*Large interstitial, subserous multilobar fibroid. Edema reduced. Tumor diminished. Operation well borne. In progress. Operator, Cutter.*

1877, August 23d, Miss S., Malden, Mass., age 24 years. Occupation, shoe worker in a rubber factory. Tumor first noticed in December, 1876. She was a stoutish, symmetrical, and healthy-looking person. In June, 1877, she was seen in consultation by Dr. W. G. Wheeler, of Chelsea, with Dr. French, of Malden, her physician. Since that time the tumor has increased in size. The abdomen presents a movable, multilobar, soft, round tumor, extending from the pubis to beyond the navel. The pelvis was occupied by a large, rounded edematous mass. The os uteri was

dilated, soft, and even-edged. The forefinger readily entered the os and pressure upon the abdominal part crowded the finger up into the uterus. The anterior lip was thin. The tumor appeared to be developed in the posterior lip and wall of the uterus. Per rectum, the tumor felt large and spongy. The chief complaint was of a great deal of pain in the right side for more than a year. No menorrhagia.

First operation.—The patient was etherized.

In the presence of Prof. Vander Veer and Dr. W. H. Bailey, of Albany, N. Y., Drs. Wheeler and Weeks, of Chelsea, French, of Malden, Hackett, of Maplewood, and Bean, of Medford, the writer introduced one electrode to the right of the navel downwards and the other electrode through the rectum. The tumor was easily penetrated. Current was continued for three minutes. She had no after-trouble and soon resumed her labors in the shop. It should be stated that Dr. Wheeler had previously introduced small insulated needles and connected them with the small battery so often alluded to in this report. The result was to cause a subsidence of the swelling and edematous condition of the vagina and pelvis.

September 6th, he made a similar application.

October 15th. It was ascertained that she had lived mostly upon starchy and sugary food. She was asked to go upon animal food strictly. The tumor had evidently consolidated somewhat, as shown by the smaller size of the os uteri and the denser feel of the growth.

Second operation.—At 4 p.m., Dr. French etherized her and in the presence of Drs. Dearborne, Surgeon U. S. N., W. S. Brown, of Stoneham, Mass., J. M. Moore, of Woburn, and French, Towle, and Wardsworth, of Malden, the writer introduced one electrode through the abdominal walls and the other through the vagina and posterior uterine wall into the tumor. Continued the current eleven (11) minutes. Pulse 100 throughout. The application was a very thorough one. October 19th. The patient was up and about and experienced no inconvenience.

October 22d. Called and found the patient had gone to Boston. Was feeling quite well. In progress.

1880, February 9th. Tumor enlarged to twice its usual size. Flows all the time for over one year. Tumor projects, is mobile. Small tumors over the surface. Tender. Tried the diet six months without success. Probably not faithful to it.

CASE XXXVI.—*Large abdominal, pelvic, and interstitial fibro-myoid. In two weeks' time after one operation the abdomen diminished five (5) inches in measurement. In progress. Operator, Cutter.*

1877, October 23d. Miss S., colored, single, and house servant. Forty-three years old. Noticed tumor in abdomen for two or three years. Been troubled with flowing for many years. Good appetite and a hearty worker in times past. In July last

she had a very profuse menorrhagia. Been confined to bed since August 8th, not on account of weakness, but of pain. She has used fluid extract of ergot and powdered ergot with no relief and with pain. Ergotin, eight-grain pills, once in four hours, however, arrested the hemorrhage so that she has got along very well at the last two menstrual periods. Complains of pain in rectum of an obstinate character whenever she has any evacuation. Also has had an edematous swelling of the legs at times. Appetite very poor. Cannot eat meat or drink milk. Potatoes and bread her chief living. Tumor hard, many-lobed, abdominal, movable on itself, also pelvic, interstitial, and posterior to the uterus. Measurement thirty-four inches. Os uteri high up in front. Tumor is increasing of late, the ergotin only checking hemorrhage.

One operation.—4.20 p.m., she was etherized by Dr. E. H. Stevens, of North Cambridge, her physician. Present, Drs. Dorr, Hildreth and the writer. One electrode was passed through the abdominal lobe on the left side. The other electrode was passed through the vagina. Current passed four and one-fourth minutes. The pulse kept up well and the operation was evidently well borne.

November 3d. Dr. Stevens reports that she has suffered very much from pain in abdomen. Right leg and thigh have swelled exactly like "a milk-leg." Better now. All insist that the tumor is smaller and the abdomen is changed in contour.

November 5th. Measurement 29 inches. Suffered a great deal of pain since operation. The right leg swelling has subsided and now the left leg is swelled and its venæ comites swelled also. No albumin in the urine. Some rectal pain. Opiates freely administered. Skin cool and pulse natural. Has had considerable fever. Food, unless small in quantity, nauseates her. There was some collapse and sinking after the operation. The shock evidently was severe and profound. Two days after operation menses appeared, and there was a copious flow for three days. After this the discharges were blackish. An improvement in the evacuation of the bowels. There is much less pain and less of a cathartic (castor oil) is needed to produce dejections. Some pain in the bladder and frequent micturition.

The milk-leg complication is new. No doubt the operation was an exciting cause, but the history shows that it had occurred six weeks before the galvanic interference. The five inches diminution of the abdomen was not *all* due to the disappearance of the tumor probably. Still the abdominal lobe was itself apparently decidedly diminished, as shown by palpation.

December 21st, 1877. Dr. Stevens reports a marked improvement. Getting well fast. Considerable detrital rectal discharge.

March, 1878. The pain and hemorrhage abolished. No increase of tumor, but the vital powers are failing. Has had an attack of severe peritonitis. Thinks that the relief from the pain, the con-

sequent disuse of morphia, and stoppage of hemorrhage are sufficient rewards for the operation.

May, 1878. Had gone to Fredericton, N. B., to reside, being in comparatively good health.

SERIES IV. RELIEVED, THREE CASES.

CASE XXXVII.—*Large tumor. Galvanism produced no effect though general symptoms were relieved. Passed over as hopeless and incurable. Operator, Kimball.*

Mrs. F., 33 years of age; never had children; stated that she had noticed for several years a tumor in the lower right side of abdomen—that it has been increasing in size rapidly for the last two months—that she has been regular in her menstrual functions, and that she has suffered intensely for four or five days before relief is afforded by the menstrual discharge. October 12th, 1874, she came to Lowell, and on the 13th submitted to galvanism in the usual form. No pain or inconvenience of any kind followed the operation, save a sense of prostration. This passed off very soon, so that on the 18th of the same month another trial of galvanism was submitted to and resulted in considerable soreness of the abdomen in the region of the tumor. Not the slightest constitutional effect otherwise was perceived, subjectively or objectively.

1875, May 22d. *Third operation.*—Tumor in abdomen about the same as when she was operated on in last October. The battery was applied to the growth, one electrode passing through the abdominal walls and the other electrode per vaginam into the portion of the tumor which was occupying the pelvis to a considerable extent. No marked effect followed this operation. In twenty-four hours after this application she felt as well as ever.

Fourth operation.—May 29th, 1875, another operation was performed. Electrodes were passed, one through abdominal walls, and the other through the vagina. This was followed by considerable pain and soreness. No impression was made upon the tumor, but the general symptoms were relieved and the case was passed as one which electrolysis could not benefit, only relieve.

CASE XXXVIII.—*Large tumor. Fibro-myoid. Galvanism procured a little relief. Operator, Kimball.*

Mrs. P., of Worcester, aged about 40 years. Though long married, never had any children. For some time she has been aware of an increasing growth in the abdomen. It is hard, movable, occupying the pelvic cavity, and extending up nearly or quite to the umbilicus. Frequent attacks of hemorrhage from the uterus constitute the chief inconvenience felt from it. These attacks have become of late so severe, and the loss of blood so great, that she is now much prostrated, and has been unable to attend to the duties of the household. Her history shows that she has taken some medicine—tonics of iron and so forth. She has tried the effect of *faradism*, but only as applied outside (percutan method) by application of sponges to various parts over the tumor.

First operation.—She came to Lowell June, 1874, and galvanism was applied to the tumor by passing the electrodes deep into the diseased mass, on opposite sides of the abdomen; current was continued ten minutes under chloroform. No special effects followed—that is, no pain or other unpleasant symptoms. Two days afterwards, a periodical attack of hemorrhage occurred and continued three days, but it was not so severe as had been experienced usually. There were other applications. The result was in a little relief to the symptoms.

CASE XXXIX.—*Complications: ascites, cauliflower ulceration of the os uteri, severe vaginal hemorrhage and great Debility. Dropsy relieved; hemorrhage checked and general health and morale improved. Fistula formed; healed. Calcareous degeneration. Death. Operator, Cutter.*

1876, November. Mrs. H., 34 H—— street, Cambridge, Mass.; was mother of one child; is a colored woman, 55 years of age. Her fibroid has existed at least fifteen years. It is dense and multilobar. It is also increasing in size. She has been troubled with severe vaginal discharges of blood and watery flux. Her husband says she “has bled like an ox.” She is now running down very fast; has been confined to bed for the last three weeks entirely. A vaginal examination revealed an extensive cauliflower excrescence and ulceration of the entire neck of the uterus. The impression made was one of malignancy; but her physician, Dr. H. O. Marcy, says he thinks it decidedly not so. At any rate the case is a hopeless one with ordinary treatment; pain is not great. Complaint is of terrible weakness and prostration. She shows a paleness, if such a word is possible to be used with one of her color.

First operation.—November 25th, as a dernier ressort, at 10 A.M., in the presence of Drs. Marcy, Holt, Clarke, and Edgerly, the patient was etherized and the writer passed in one electrode through the tumor a little below the navel on the left side. The other electrode was passed in above and to the right of the navel about two inches in depth. The current was passed only three minutes on account of the great weakness of the patient, whose pulse became very quick with symptoms of fainting. Some fluid escaped through the punctures during and after the operation. There were some convulsive twitchings of the abdominal muscles when the connections were made with the electrodes. Next day Dr. Marcy packed the vagina with a styptic. Oozing had ceased.

November 27th. Found the patient getting out of bed; bowels much less distended because of the disappearance of the ascites; hemorrhage from the vagina had ceased.

December 7th. Not so well; suffered from heat and fever; bowels were sore and tender; in bed; considerable colorless liquid flowed from the vagina; operation deferred. Is this case malignant? December 13th, I found Mrs. H—— half dressed in bed. She states that she is up more than half of the time; the watery vaginal discharge has lessened; the abdomen is wrinkling up, but

still tender; no appetite; evidently her morale is improved. On being asked if the operation had done her any good, she looked up astonished, and after a considerable pause said, "lots of good." Ordered elixir of calisaya bark as a tonic and appetizer.

December 27th. In bed; temperature of body cool; appetite is good; bowels less tender; no metrorrhagia since operation. She wants another application. I thought it advisable, though the attending physician dissented; afterwards he withdrew his dissent.

January 3d, 1877, *operation* repeated; electrodes were introduced under ether three inches deep; current was passed three minutes; the pulse at the beginning was 96, at the close 84; hands were cold, face a little pinched; serous fluid exuded from the punctures.

January 9th, I found Mrs. H. in bed, pulse regular, countenance good. She said she should be up and about the house if it was not such very cold weather; bowels compact and a little tender; appetite good.

January 18th. In bed still, but feeling pretty well; tongue coated; she is in want of good care and nursing; the puncture on the right side is open and oozing. This is probable due to the uninsulated part of the electrode coming in contact with skin.

February 16th. *Fistulæ* at site of both punctures, some oozing and scabs about them; no pain or discomfort; patient up and dressed and about the house; great appetite; no hemorrhage from vagina.

March 14th. *Fistulæ* closed under the use of plaster and mutton tallow; up and dressed; feeling well, but feeble and weak; countenance improved; no ascites. About ten days ago she had a return of vaginal hemorrhage, which was relieved by an injection of warm water.

27th. Two more hemorrhages; feels discouraged and indisposed to continue applications.

April 1st. Dr. Marcy and myself examined the vagina by touch and Sims' speculum. The diameter of the vagina and cervix uteri appeared less than at the first examination. The excavation was longer and deeper, instead of being flattened as before. The cervix was granular, irregular, and torn as if dog-bitten. Slight hemorrhage; appetite very good for her.

May 3d. She uses the St. Leon's spring water with success for constipation.

Third operation.—Present, Drs. F. M. Dearborne, Surg. U. S. N., Sanford Lawton, of Springfield, and Marcy with the writer etherized the patient. The lower lobe on the right was penetrated to the depth of three inches; the other electrode was directed into the uppermost lobe in the abdomen; it met with a solid resistance. More force was applied and the instrument suddenly slipped over the surface of the lobe, made its exit through the skin and punctured the middle finger of the writer. The handle of the electrode was broken; tried it again and intro-

duced the point only. Evidently there was a stony hardness due to calcareous degenerations. Another lobe lower down was more readily penetrated. Four-minute application. It was feared this repeated and prolonged penetrative efforts would produce serious harm.

May 8th. Found her dressed, sitting up in bed and sewing. She suffered a good deal after the operation for a time. Punctures healed; bowels somewhat tender; pulse normal; skin cool; eats. Husband states "that she suffered terribly after the operation and he thought she would die." He desires no more operations. Death from the recurrence of the bad symptoms occurred in the course of six months.

SERIES V. CURED, ELEVEN CASES.

CASE XL.—*Enormous tumor resembling full term of pregnancy; marked decrease in size following application of galvanism; teaching resumed; permanent relief of pain; cure. Operator, Kimball.*

Miss C., Salem, Mass., school teacher, maiden lady, 43 years of age, had fibroid disease of the uterus of several years' standing, previous to March 2d, 1874. Till within a few months it gave no special inconvenience. Lately, it has made a serious impression upon the constitution, especially from its having been attended with frequent and profuse hemorrhages. She was obliged to relinquish school teaching, and had given up hope of ever resuming it again. She has made use of no special treatment, but has resolved finally to try the experiment of galvanism. For this purpose she came to Lowell on the above date.

First operation.—On the next day, the 3d of March, 1874, galvanism was applied for the first time. The electrodes were introduced into the tumor three inches through the parietes on either side of the umbilicus, four inches apart. The current was continued *ten* minutes under chloroform. No pain followed the operation. Next day there was considerable soreness in the region of the tumor, and some uterine hemorrhage. She was kept quiet in bed for two days. Meantime the hemorrhage nearly ceased. For a week after this the patient kept about her room free from suffering of any sort. Her appetite was somewhat disturbed at first, and finally returned as good as ever. No obvious diminution of size of tumor.

Second operation.—March 11th, galvanism was applied for the second time, and in the same manner.

Other operations.—It was subsequently applied several times, and the improvement was so marked that she left for home in April and resumed her occupation as a teacher. After her return to Salem the pain recurred. Her general health was greatly improved. She had lost something in weight, and as to size, there was an evident diminution of the tumor. On account of the pain she visited Lowell again on May 1st, 1874. Meanwhile she had been steadily engaged in school teaching. On the

whole she was gratified with the results of the treatment. *One application* of the galvanism sufficed to remove *permanently* all the pain of which she complained. Subsequently there was a very marked additional diminution of the tumor, so much so that whereas before her appearance on the street she resembled a woman just about to be confined with a child, now there was no enlargement visible to an uninterested observer.

1886, Dec. 7th. Report: "My health now seems to be perfectly restored. I am very grateful to Dr. Kimball and all connected with him for the skilful treatment which brought me from confirmed invalidism to my present state of health."

CASE XII.—*Large fibro-myoid increasing in size; general health bad; menorrhagia; tumor diminished and softened; general health much improved; subsequent increase of tumor; April 30th, 1878. Cure, 1884. Operator, Cutter.*

Miss K., of East Boston, was 44 years of age when first seen in 1875. She was a single woman, of Scotch descent, deaf, and her occupation was that of keeping a fancy dry-goods store. She presented a large fibroid tumor mostly abdominal. It was first noticed ten or twelve years ago. It was very hard, multilobar, and the lobes were glued together. Lately it has increased in size. She was troubled with pressure in bowels and gnawing sensations, menorrhagia, and dysmenorrhea. General health was never very good, and is subject to rheumatism. She had lived almost entirely upon a farinaceous diet.

First operation.—June 10th, 1875, in the presence of Drs. W. S. Brown, of Stoneham, and A. Ricketson, then of Woburn, I applied the battery, using four ounces of ether. The electrodes were passed into the growth three and a half inches deep on opposite sides of the abdomen. The current was continued for five minutes. Pulse was 72 and feeble. It continued throughout the operation, except that it was increased in fullness. On coming out of the ether, she expressed herself as suffering from pain, and one-quarter grain of the sulphate of morphia was administered subcutaneously with relief. No ill came from this operation. She was put upon animal diet exclusively. At this time the measurement was thirty and one-quarter inches over the most prominent part of the tumor.

Second operation.—June 30th. There was no difference in the measurement. Tumor more mobile. Appetite and general appearance improved. She states that she suffered more from the ether than the punctures. Hence, in this application, the endeavor was made to give as little ether as possible. A coarse linen towel was used, four thicknesses, folded square. A spot in the centre was saturated with ether. The towel was then held closely over the mouth, and the patient, previously instructed, drew in long inspirations. The air easily passed through the meshes of the towels in and out. The carbonic acid gas was exhaled, and the inspired and expired air was thoroughly loaded

with the vapor of ether. The anesthesia was quickly obtained, and only three ounces were used during the operation. The electrodes were introduced as in the first instance. The current was continued for five minutes. The carbon electrode pulled out hard, and the zinc electrode easily. The patient also came out of the influence of the ether readily, and was not so sick as before. Following this application there was some soreness, but not much general disturbance.

Third operation.—July 15th. She experienced no inconvenience from this “last” operation. Effects were not marked, except that there was no menorrhagia at the last period. Appetite about the same. There was some complaint still of the ether, and this time especial care was taken not to use more than was absolutely necessary, so that only one and a half ounces of ether were consumed. Yet anesthesia was maintained during the five minutes’ passing of the current. Pulse was natural throughout. Operation well borne. No trouble from ether. The electrodes were passed into the large lobe on the right.

July 22d. She was somewhat prostrated by this application. She had some tenderness, and required nursing and lying in bed longer than after previous ones.

Fourth operation.—September 16th. This application was honored by the presence of the venerable Dr. Phineas M. Crane, of East Boston. Measurement was noted to be twenty-nine inches instead of thirty and one-quarter, as before. The current was passed through the right lobe, as before indicated, for the space of eight minutes. Pulse rose from 60 to 80 during the application. Appetite about the same. Animal food was enforced, but with difficulty, as the patient turned against it.

Fifth operation.—Measurement twenty-nine inches. General appearance has improved, though the appetite is not very good. She had a severe pain, lasting for two hours, all over the bowels and a tenderness that lasted over a week. Still she said she got over the last operation better than any other. She was etherized and the electrodes again thrust into the right lobe as before. The current was continued ten minutes. Pulse good throughout.

Sixth operation.—Oct. 29th. Measurement twenty-nine and one-quarter inches. Not much effect apparent from the last operation. It was repeated in the same manner in all respects. One electrode was passed in on the right side and the other on the left. Palpation and the diminished resistance given to the electrode showed the tumor to be decidedly softer on the right. The current was continued for *fifteen minutes*, a longer time than ever employed in *any* case. Pulse 72 throughout.

Nov. 21st. It was reported that from one to two pints of serous fluid exuded from the wound, curiously enough, on the *left* side. No ill resulted therefrom.

1876, Jan. 6th. *Seventh operation.*—Drs. D. F. Lincoln and E. Chenery were present. One of these gentlemen was a spe-

cialist in electricity, and made a careful examination of the procedures. The general condition of patient had improved. Evidently a profound impression had been produced by the repeated blows of the successive operations, as the tumor felt much softer on both sides. At this time a new method of locating the electrodes was practised. Instead of being kept as far apart as possible, they were passed in from either side, so that one overlaid the other—the distance being not less than one-half an inch between. The resistance felt like that of cheese. The current was passed through fifteen minutes. No thermic effect was produced, and of this the electrician was satisfied. The blood that flowed out on the groove of the carbon electrode coagulated into a firm clot. The blood on the zinc electrode was fluid. The clot proves that the current *did* pass between the electrodes. A few days subsequently Dr. Chenery visited the patient, and reported that there was a deep transverse fissure in the tracks of the electrodes, another proof of some local action.

October 29th, 1876. Drs. T. G. Thomas, Semeleder, Wheeler, and Warner, with the writer, visited Miss K. They found her apparently quite well. The tumor had lessened from its original bulk and had changed its character from multilobar to multinodular. The patient attributed the great benefit to the change of her *diet from flour to animal food*.

And here it may be remarked that the animal food diet was adopted on the suggestion made by Dr. James H. Salisbury, that these fibroid growths owe their existence mainly to an excess of starches and sugars in the food. Other cases sustain this position.

In a letter dated 1886, Dec. 2d, she writes, "the tumor went away two or three years ago."

CASE XLII.—*Diminished one-half. Two applications. Subsequent entire disappearance. Operator, Kimball.*

Mrs. P., Manchester, N. H., 26 years of age. Tumor as large as a bowl. Unwell twice a month. The tumor was hardish and punky. Gave her two applications of electricity with an interval of three days. Current was continued five minutes in each case. It made a tremendous impression, causing severe pain, vomiting, and prostration. The first application was through the abdominal walls, the second through the vagina. Before the first operation the neck of the uterus could not be felt or found, but the finger came in contact with the fibroid. Result of the operations was a diminution of the tumor one-half, and she could cross her lower limbs which she could not do before.

October, 1877. Dr. Kimball reports that he saw her incidentally and that the tumor had *entirely disappeared*.

CASE XLIII.—*Large fibro myoma. Three applications. Complete and permanent cure. Published January 29th, 1874. Bost. Med. and Surg. Jour., p. 112. Operators, Kimball and Cutter.*

"About the middle of April, 1873, I was called to see Miss F.,

of Haverhill, a maiden lady, 34 years of age. I found her suffering from a large uterine fibroid of two or three years' growth. It was hard, globular, movable. She was very feeble and anæmic from frequent and profuse hemorrhages; she had given up to die and was stated 'to have gotten through with all the pangs of death.' The recent increase in the size of the tumor, together with various symptoms of local and constitutional suffering, suggested the necessity of some speedy and effectual relief. Seeing no occasion for surgical treatment, I proposed the trial of electrolysis. The proposition was accepted at once.

First operation.—A few days after, the 22d of April, galvanism was applied, Drs. Cutter and Chase assisting. Chloroform was given and the electrodes were passed through the parietes of the abdomen on either side, penetrating the hard tumor about three inches with ease. The current was then continued *three* minutes, with an effect seemingly less profound than in the previous cases where *no* anesthetic was used. There was no expression of suffering of any kind on coming out from the effect of the chloroform. For the week following, this case presented no new or specially marked symptoms. Evidently no harm was done and the patient was left in bed. On account of my absence and Dr. Cutter being in a distant part of the country, this patient was not approached until the latter part of June. During this time, however, she seems to have made favorable progress; her health generally was improved and the tumor had manifestly diminished somewhat in size.

Second operation.—Assisted by Drs. Coggsell, of Bradford, and J. R. Nichols, of Haverhill, Dr. Cutter made the second application of galvanism the 23d of June. Electrodes were introduced as on the previous occasion, and the current was continued *five* minutes. The pulse was somewhat quickened, the hands and legs rather cool; but slight prostration followed. Next day the patient was very comfortable. In bed and made no complaint of suffering of any kind.

Third operation.—August 22d, galvanism was again repeated by Dr. Cutter, assisted by Drs. Chase and Nichols. The progress was in all respects the same as before. General improvement had gone steadily on up to this time. The tumor had gradually diminished. Such was the state of things on my arrival home from Europe the first of September. About the first of October the patient called on me in Lowell, in order that I might the better judge of her actual condition by a professional inquiry and examination. The result of the interview was most gratifying. It appeared that from the day of the first experiment with the battery up to the present time *there had* been a regular improvement in every particular, but more especially in regard to the local malady. The tumor, which only six months before I had seen occupying a large portion of the pelvic cavity and extending quite up to the umbilicus and not less than eight or nine inches in diameter, had now so far disappeared that what remained yet could

scarcely be felt. Its final disappearance altogether can now hardly be questioned, and with this event it is reasonable to suppose recovery will ultimately be complete in all respects. (This anticipation has been perfectly realized; October, 1877). In this instance, electrolysis has certainly achieved a complete triumph. The means used and the results that followed are too closely related to admit of the question of mere coincidence.

Whatever may come of a further trial of galvanism, whether as applied to uterine fibroids or to any other form of disease, enough has been accomplished in this single instance to show that as a therapeutic agent it deserves and must eventually receive from the profession a far greater consideration and confidence than has yet been bestowed upon it.

The patient at the present is in perfect health. Lately examined by the vagina and abdomen, not a trace of the tumor could be discovered. It should be stated that after the first operation there was more or less of a flow from the vagina of a dark-colored fluid which ceased with the entire disappearance of the tumor. It would be very gratifying to record a like result in all cases; but truth and candor compel a different relation.

CASE XLIV.—*Large tumor reduced one-half. Menorrhagia and intermenstrual flowing checked. Health restored. 1879, October 18th, on examination, tumor entirely gone. Operator, Kimball.*

Mrs. A., of Boston, a widow aged 43 years, was seen first on November 5th, 1873. She has had three children; for many years has had uterine disease. On examination, it proves to be fibroid enlargement—interstitial, irregular, and pressing backwards against the rectum. She is very pale and languid from the loss of blood, having suffered from excessive hemorrhage for years, and persistent uncontrollable flowing between her regular periods, so that she is in a decidedly anemic condition and is unable to endure bodily exercise without a sense of extreme exhaustion.

First operation.—Galvanism was suggested, and with the advice of her physician the battery was brought to bear upon her case on the same date, viz., November 5th, 1873. The electrodes in this case were introduced deep into the fibroid growth—one through the rectum and the other through the vagina. The current was applied five minutes. The effect of the chloroform having passed away, a good deal of pain was felt in the region of the tumor. In about two hours, a severe chill was experienced, lasting nearly two hours. It was followed by high fever, thirst, and a pulse of 120. Six hours after the operation, the pain and fever had subsided and the patient passed a comfortable night. The urinary secretion was very abundant.

Other operations.—There were other operations resorted to with effect, as the tumor was reduced more than one-half in size. The hemorrhage at the menstrual periods and between had a cessation to a normal point. General health restored.

1879, October 18th, on examination *tumor entirely gone*.

CASE XLV.—*Three operations. Tumor pelvic; myo-fibroid, reduced one-half by first application of the current, three minutes' duration. Subsequent entire disappearance. Operator, Kimball.*

Mrs. C., of Haverhill, Mass., aged 23 years, October 12th, 1874, consulted Dr. Kimball with her attending physician Dr. William Coggeswell. Found her suffering from a fibroid tumor of the uterus of several years' standing. She had experienced great inconvenience from its pressure upon the bladder, causing a constant incontinence of urine and also requiring each time the bladder was evacuated a forcible pressure over the pubic region. Occasional hemorrhage and a persistent serous discharge followed menstruation; her nights were disturbed; there was a sense of pressure in the pelvic region. Examination disclosed the presence of a fibroid growth involving the entire body of the uterus, and so developed as to almost entirely fill up the vaginal space. The finger carried upward directly under the arch of the pubis passed over a rounded tumor, quite smooth and about five inches in diameter. The neck of the uterus could not be felt in this direction. The finger passed posteriorly was at once arrested in a cul-de-sac within less than one inch of the vulva and without touching the os uteri.

First operation.—Applied the galvanic current October 19th, Drs. Howe and Towle present. Both electrodes were passed into the tumor through the vagina; the points of entrance were about two inches apart; patient under chloroform; galvanism continued for three minutes. On recovery from anesthesia, there was very little suffering. The next day the patient seemed very bright and cheerful and so continued till November 3d, the date of my second visit. Her condition had been very satisfactory, no suffering from the effects of the operation. On the contrary, her health had generally much improved; pressure upon the bladder gone; incontinence of urine much less. Instead of being obliged to leave her bed many times during every night, she was now able to rest most of the night without that necessity. *Examination of the tumor showed a diminution of one-half, and instead of the peculiar hardness of a firm fibroid, the diseased organ had become quite soft and flabby.* The patient expressed herself as greatly improved. The same day the galvanism was applied for the second time, through the vagina, as before. Dr. Cogswell assisted. The third operation was performed six weeks after the second. The general improvement still continued; the patient was able to walk about among the neighbors without difficulty; the pressure on the bladder was greatly relieved, and incontinence of urine was much better.

Subsequently the tumor entirely disappeared, but this was not followed by a restoration to health. It was reported that the patient did not receive proper care and nursing, but became bed-

ridden with a large bed-sore, and died finally from exhaustion—a sad result in so striking a case. The nature of the complication was not known, as there was no autopsy. The striking points in this case are: the rapid diminution and subsequent disappearance of the fibroid, and the failure of this marked removal of disease to restore health. As far as the galvanism goes, it has a very gratifying result which otherwise could hardly have been deemed probable or possible.

CASE XLVI.—Pelvic and abdominal fibro-myoid diminished by one operation of fifteen minutes, afterwards the large abdominal lobe became cystic. Aspiration of purulent chocolate-colored liquid. Application of percutan galvanism to cyst. Diminution. Operator, Cutter.

Miss C., of ———, unmarried, aged 44 years, came under my charge October 30th, 1875. Her health was never very good. She had noticed the growth in her abdomen for a year or more; said it came on very suddenly after a severe strain received on lifting a heavy bedstead; she suffered from pain and pressure in bowels, constipation, dyspepsia, and frequent micturition. There was no excessive uterine hemorrhage; the thighs ached. She was very weak, reclined for most of the time on a lounge, but yet performed the duties of a housekeeper. The fibroid was one of the stony-hard variety, multilobar. It nearly filled the pelvic cavity with an immovable mass that crowded the uterus forward and twisted it under the arch of the pubis so that it could be felt only with difficulty. The abdominal portion of the fibroid was movable and sore to the touch. It lay so closely to the iliac bone that there was hardly any fissure to be detected between. The feeble condition of this patient was thought to preclude her from the application of galvanism at present. She was advised to live upon the strict animal food diet until her system should be recuperated, so there should be more vital force to respond to the stimulus when applied. Whether this idea was correct or not, it was adopted and carried out to the letter of the law. A more faithful and obedient patient is rarely found. Moreover, she took quinine and a laxative that had agreed well with her, also baths of aromatic sulphuric acid, one drachm to the pint of water, night and morning. With varying experiences she spent nearly nine months under this régime. The pain and soreness improved. The tumor evidently lessened in size, as shown by the looseness of the dresses and the larger size of the fissure between the ilium and the tumor; health and strength were better. In July, 1876, she went to the sea-shore in order to derive benefit from the climate. The change agreed well with her. She gained flesh, appetite was good, and she appeared in sprightly spirits. At this time it was thought that this would be a good opportunity to derive benefit, if any, from the application of galvanism. It was not that she was not progressing satisfactorily under the diet treatment, but that she wished to derive all the advantages

possible from any additional resource adapted to the peculiarities of her case.

One operation.—Accordingly, on July 31st she was etherized and submitted to the battery at 3 P.M. Present, Drs. F. A. Sawyer, Wareham, and L. H. Luce, Tisbury, Mass. The apparatus was in fine order and struck out very large sparks, evincing the presence of a powerful current. One electrode was passed through the rectum and the other flatwise through the large flattened lobe of the fibroid which measured $6\frac{3}{4}$ inches by 6 inches. Current was continued fifteen minutes; pulse not much accelerated; some vomiting. The patient was bathed in a warm sweat; equal parts of alcohol and water were applied warm to the bowels; coffee and diluted alcohol were administered by the mouth. Considerable fever and thirst, followed with great prostration, continued to annoy the patient for so much longer time than usual that I regretted continuing the current for fifteen minutes; a shorter time would have been sufficient without the serious effects. In the course of a week or ten days she was afflicted with an obstinate cough that kept her bowels stirred all the time. It was associated with a sore throat and enlarged tonsils, reminding one of diphtheria. Local applications of the liq. ferri persulphatis, U. S. P., relieved the cough. Eighteen days after the operation she returned home feeling comparatively well. Soon after she took cold. An unusual degree of soreness in the right lobe of the fibroid followed.

September 22d. The report reads: "Miss —— has considerable prostration, abdominal swelling and tenderness, and considerable pain to the right of and above the navel near the hepatic region. Still she says that in the following particulars the galvanism relieved her :

1st. Constipation, which had existed for many years, has been removed since the operation.

2d. She can lie all night without being obliged to rise and empty the bladder as before the galvanism.

3d. The distress 'low down' has been relieved.

4th. Her sleep is now continuous and unbroken, for which she feels especially grateful.

5th. She feels that the effect of the galvanism was very profound and 'took a great hold upon her,' but that it generally has been of great benefit to her."

A singular and unique feature of the case is the peeling off of the epidermis from both hands. This was thought to indicate the influence upon the systemic nutrition.

November 1st. Complains of a very troublesome cough which a careful exploration of the lungs and throat do not explain. Used the nascent chloride of ammonium with some relief. The bowels were tender and there were no physical signs of the great changes which followed.

November 27th. Complains that the tumor is increasing, as she finds she is growing larger. She has chills daily, followed by

afternoon fever. Cough very troublesome. General malaise. Tongue coated. On examination, I found a remarkable, unexpected, and unique result. The right side of the abdomen was distended by a large rotund tumor, which, percussed or palpated, gave a distinct wave from side to side and could be felt in the vagina communicating with the uppermost part of the swelling. Two or three round and hard fibroids were felt in the pelvis, and it was estimated from the increased room in the vagina and rectum that they had diminished at least one-half since the application of galvanism. There was a change from the dense unyielding mass to a soft elastic fluctuating cyst.

December 1st, 4 P.M. Aspiration withdrew one pint of a creamy, purulent, chocolate-colored fluid. So much intense suffering was produced that I was obliged to stay the aspiration before all the fluid was drawn off. That so much severe distress should have been produced by the smallest aspirator needle seems unaccountable and peculiar. There was syncope and fainting. Under the microscope the fluid was found to contain pus-cells, granules, granular wine-colored masses like those found in ovarian fluid, fat, and débris.

December 2d. Aspiration having proved to be so severe, and galvanism after the previous method being deemed inadvisable, it was decided to act upon the purulent fibro-cyst by means of the constant current furnished by a ten-celled small copper-and-zinc battery, newly invented by the writer, passed by the "percutan" method, that is, through the skin without penetration. This battery was devised to meet the want of a simple, cheap, and effective source of galvanism sufficient to decompose water and capable of acting upon all abnormal liquid collections within the body with the view of dissipation. It is contained in a paraffin paper box, $4\frac{3}{4} \times 3\frac{1}{8} \times 2\frac{1}{4}$ inches. Ten cells are bored in a paraffined block of wood. A coil of copper-wire fits into each cell. Next a lamina of black walnut veneer is curled up inside the coil of copper. Inside the walnut is the zinc element. Each copper is connected with the next zinc. The battery is excited with strong vinegar. It should be washed and cleaned with water after use.

Miss C. was instructed to use this battery at least three hours daily. One electrode was to be placed on one side, and the other electrode on the other side of the cyst and to be changed about as the skin should become sensitive. Quinine, baths and animal food continued.

December 5th. The cyst is evidently smaller. Battery has been applied thoroughly and works well. Suffering from pain in abdomen. No marked chills. Considerable thirst. Hotter in the afternoon. Pulse 108. Takes six grains of quinine daily. Don't sleep much. Lower limbs have spells of nervous distress. Measures over the crests of the ilia twenty-nine inches. *Veratrum viride* given.

December 8th. Dr. Kimball saw her for the first time. Regards her case as a curious episode in the history of galvanism

applied to uterine fibroids. Thought the cyst might be ovarian. His prognosis was decidedly bad from the dangers of septicemia. It must be remembered that he was familiar with such symptoms occurring after capital operations. As compared with her last condition she was better. Pain much less. Pulse and tongue normal. Cyst still diminishing and softer. The small battery was applied often and long. December 12th. Found her up and dressed. Lively spirits, pulse, tongue and skin natural. Appetite and sleep good. Able to move about much better than before. Tumor tympanitic over upper half and down at left lower side. Battery works well.

December 19th. Much better. Appetite good. Sleeps well. No chills. No fever. Tongue clean. Pulse natural. Can lie on her left side, which before she could not do. Cyst appears smaller, less fluidity, and harder. Complains of more bearing-down pain in lower abdomen, of frequent micturition, and of constipation.

1877, January 25th. Battery causes pain and is discontinued. Tumor denser and less elastic.

February 3d. Cyst has enlarged and fluctuates and has lost all the denseness seen at last visit.

February 4th. She passed per rectum a cupful of matter which smelt like rotten eggs, and was of the color of the aspirated fluid. Tumor lessened in size.

February 15th. Night's rest broken by frequent micturitions. Tumor continues smaller. Cough very troublesome. Let up on her diet and allowed more license.

February 27th. Cough relieved by inhaling steam of hot water in a coffee-pot. Abdominal tumor lessened more and hardened. Pelvic portion also diminished. Takes Trommer's extract of malt.

March 14th. Feeling very much better. Appetite good and food digested. This is attributed to the use of the malt. Vaginal douches of hot water quiet the vesical tenesmus. Uses the battery again three hours daily. Tumor in abdomen, entirely to the right of median line, somewhat tender. Takes rice, oatmeal, crackers, and pilot bread.

March 27th. Vaginal douche fails to relieve as before. Otherwise improved.

April 14th. Gradually growing stronger. Menses last week scanty.

April 28th. Vaginal douche relieves again. Uses one electrode of the battery in the vagina. Abdominal tumor still lessened in size. More room in pelvis.

May 8th. St. Leon water now a success. Goes out in sunshiny weather.

August 31st. Returned from vacation with improvement in flesh and strength.

September 22d. Abdominal tumor quite small. Pelvic portion apparently increased in size.

October 20th. Goes to church and rides out. General appearance good. It is but just to add that the patient regards her improvement due to the *diet* more than to the galvanism, although continuously applied for almost a year.

1880, January 28th. Fibroid diminished very much. Measures around the waist twenty-four inches. Over the crests of the ilia, thirty-four inches. A little obese. The tumor is evidently diminished. Menses regular. General appearance improved.

1886, November 24th. In apparently perfect health. Two nodules, each of the size of a chestnut, felt in the cavity of pelvis over the sacrum. The cervix uteri which for many years was jammed against the pubis is more than one inch distance off. With difficulty by bimanual manipulation a tumor is felt between the vagina and left hypogastrium.

CASE XLVII.—*Entire disappearance and recovery. Probably fibro cystic. Re-appearance and disappearance. Operator, Kimball.*

Mrs. H., Manchester, N. H., July 14th, 1875, complained of bearing-down and other uncomfortable feelings in the lower part of the abdomen. Never had any children. Age about 40 years. An examination showed a small enlargement in pelvic cavity, but from the thick covering of adipose tissue it was difficult to say whether it was uterine or ovarian. Finally, supposing it was the former, it was concluded to try the effect of galvanism.

First operation.—Operation performed on the above date. From the readiness with which the electrodes penetrated the tumor, there was some good reason to suspect the presence of an ovarian cyst.

Second operation.—On the following day, no marked effect was observed from the galvanism and it was re-applied.

After several other applications, the tumor entirely disappeared and she returned home. Subsequently it re-appeared and she returned to Lowell for the purpose of another trial.

Twice she submitted to the operation. On proceeding to operate on her for the *third* time, no evidence whatever was found of the existence of a tumor.

Remarks.—It would be politic perhaps not to mention this case at all, because it may seem to prove too much. But as this is a historical rather than a paper of special pleading, it is given with the doubts here expressed. It was gratifying to have the tumor disappear and the patient cured, which result is very much more than was ever anticipated.

Arrest of development only was all that was hoped for. This aim must not be lost sight of in the perusal of this paper. We are disposed to call this case fibro-cystic. As showing the true experience derived from these newly-tried procedures, it has a marked place in the history.

. Postscript, January 30th, 1877. The tumor has not re-appeared. General health still good.

1880, May 27th, Dr. Kimball reports that Dr. How, the attending physician, says the tumor has re-appeared, but to a small extent. There is no interference with the general health.

CASE XLVIII.—*Large fibro-myoma. Multilobar. Abdominal. Pelvis packed. Dysmenorrhea. Metrorrhagia. Severe nocturnal colics. Inability to lie on left side. Pale, thin, and anemic. Operator, Cutter.*

Miss L. T., of Stoneham, Mass., dressmaker, age about 40 years, had large multilobar fibro-myoid, existing for fifteen years. Tumor occupied the abdomen from pubis to beyond the umbilicus and packed the pelvis.

She complained of excessive pain in left lower abdomen, particularly at night after going to bed. This occurred *every night* without fail and often was so severe and serious as to involve the presence and assistance of her family physician; of frequent micturition, especially at night, thus breaking up her sleep; of constipation of the bowels; of pelvic pressure; of excessive and exhaustive uterine hemorrhages; of a loss of appetite; and of a loss of her hold upon life so much so that she had about given up to die of despair.

Her physician, Dr. William F. Stevens, of Stoneham, called my attention to her case in July, 1874. I found the pelvis packed with a fibroid as hard as a rock. The digit could penetrate the vagina only a little distance and in the rectum it encountered the growth very readily.

In the abdomen there were found several lobes of varying sizes and shapes, ovals and flattened obovoids, all movable to a limited extent. In the left iliac region, where she had the severe nocturnal colics, was the largest lobed oval measuring 3x4 inches. The patient's general appearance was bad and of an ordinary pregnancy at term. She was pale, spare, thin, and anemic. She was advised to make trial of electrolysis and fully informed as to the experimental character of the operation. The risks were stated and fully understood.

First operation.—She made her will and July 28th, 1874, the battery was applied for five minutes. One electrode was passed through the rectum into the pelvic portion of the growth and the other into the largest lobe found in the abdomen. Ether was employed. She came out of the operation well, with no apparent results save being at once relieved of pressure on bladder and rectum.

Second operation.—August 4th, 1874, the operation was repeated. She measured twenty-seven inches about the navel and twenty-nine and one-half inches about the most prominent part of the abdomen. This operation was more marked in its effects. She had slight fever, combined with tenderness and soreness of the abdomen, which confined her to bed for a few days. These symptoms passed off with no bad effects.

On November 24th, 1874, she was again seen and "reports to-day the following improvements in her condition: She feels perfectly well in every respect. Her clothes come together two inches less in size. That for the last twelve, if not twenty, years she has been the subject of abdominal cramps very severe and hard to bear; since the last operation they have wholly disappeared. Her severe dysmenorrhea has now become painless. Appetite has returned and is good. Her night sleep which before was troubled and inconstant has now become constant and continuous. She can now lie upon her left side which was impossible before. She feels more like and *is* working more than ever before. Growth diminished."

The reaction in this case was marked and gratifying. February 4th, 1875, she reports her general health better than for three years past. Works very hard at her dressmaking. Appetite, strength, and flesh good. Tumor has risen higher up and is more distinct.

Third operation.—The patient was etherized, and the battery was applied for *seven* minutes, Dr. Stevens, Sr., of Stoneham, being present. One electrode was passed into the vagina and the other into the growth on the left side. No ill results ensued.

Fourth operation.—February 17th, 1875. Abdomen more enlarged. It measured $31\frac{1}{2}$ inches over the most prominent part. It is doubtful whether this enlargement was due to an increase of the tumor, as she had generally increased in flesh. Her diet eschewed flour and starchy food. At 2.30 p.m., in the presence of Dr. Stevens, Sr., one electrode was introduced into the pelvic portion of the tumor through the vagina, and the other into the upper part of the left inguinal tumor. This lobe was more mobile than ever before. The current was passed for *seven* minutes. The immediate effect of this application was more marked than of any other one. The vaginal puncture bled severely for a short time and then ceased. There were severe chills, and the pulse rose to 120. Fever. Great tenderness of the abdomen near the seat of puncture. Thirst, and indeed all the signs of severe peritonitis, were present. These symptoms were energetically treated with a large number of leeches applied to the abdomen; warm fomentations; blisters; veratrum viride by stomach; stimulants, etc. She attributes this to a cold she had taken, but said nothing about it until 1886. She recovered after a short time. The record reads: "Dr. Stevens, her physician, is very much pleased with the marked improvement in this case. The rejuvenation he regards as very remarkable."

The summer months of this year were spent at Nantucket. On her way hither she reported herself at office. She looked and appeared in perfect health. The tumor was diminished in size.

In July, 1876, she went to the Centennial Exposition, and bore its fatigues and sight-seeing better than two healthy young ladies who were her companions. From thence she went on a visit to Illinois and Michigan, returning by Montreal and New

Hampshire, "and during this excursion, occupying two months, she often had occasion to ride over rough roads in farm wagons without springs, yet says she suffered no inconvenience, and felt well every day. She looks and acts as though in perfect health. Twenty-eight months ago she was a suffering invalid, growing worse every day."—Letter of Dr. W. F. Stevens, received May, 1878.

She returned with vigor unimpaired, and now claims that she is as well as any one. The immunity from pain continues. Her bowels are regular; her menses are natural; her spirits are remarkably animated; she has no hesitation in attributing her improved physique and morale to the interference of electricity. She prosecutes her profession of dressmaking vigorously, and works very hard. The growth remains diminished.

Remarks.—It may have been noticed that the vaginal puncture in the last operation was followed by considerable hemorrhage. The question of preference of the site of puncture in pelvic growths may perhaps be partially decided by the experience in this case, as there was no trouble when in the first two applications the punctures were rectal. It is, then, probably better to make the electrodic penetration through the rectum. Other cases show this also.

Mobility. It has been generally found that the electricity increases the mobility of the fibroids.

1886, September 25th. Examined at 1730 Broadway, New York, and found no tumor. Uterus normal. Dr. T. Gaillard Thomas examined the case subsequently, and confirmed the above diagnosis; Dr. Paul F. Mundé also reported that no tumor was to be found on examination.

CASE XLIX.—1877. *Small multilobar fibro-myoid; painful and tender; menorrhagia; anemic and debilitated.*

Result:—Tumor somewhat diminished; pain abolished; restoration of health, vigor, and spirits; in progress.

1884, March 28th. Tumor size of squeezed lemon. 1887, March 17th, no tumor found. Operator, Cutter.

Mrs. S., of Chelsea, 54 years of age, mother of one child, is a small, thin, very nervous and active woman. Her fibroid is small, hard, and multilobar, extending to level of navel on right. It has existed for four years. Abdomen is painful and tender. She has suffered very much from menorrhagia.

First operation.—On Friday, November 3d, 1876, she was etherized, and in the presence of Drs. Kimball, Wheeler, S. W. Abbott, of Wakefield; Hanscom, of Somerville; and J. F. Pratt and Chipman, of Chelsea, the electrodes were introduced (through lancet punctures previously made in the skin) into the largest lobes, which were located upon the left side. The battery was attached, and the current passed for five minutes. Blood

flowed from the punctures, and collected in the grooves of the electrodes. That upon the carbon electrode was coagulated into a large, firm, and white clot, demonstrating the passage of an electrolytic current through the tissues of the patient. The operation was well borne. Pulse was regular throughout.

Nov. 10th. She feels prostrated from the operation, and complains of a sharpish, sticky feeling about the site of punctures. Otherwise quite well. Sitting up.

Nov. 25th. No perceptible change in the tumor, but a great improvement in health and strength. She is free from pain, and feels as well as ever she did. This her physician reported to me, as she was out making visits when the writer called.

28th. Feeling very well indeed.

Dec. 6th. She insists that she is much smaller, and inspection and palpitation confirm her statement. Tenderness much less than before application. General appearance much improved. It was thought best to defer further interference, as she appeared to be doing so well, and the pain was gone. It was suspected, however, that the same physical changes that occurred in case XL. were going on in this case.

Second operation.—1877, January 4th. Galvanism was repeated. The current was passed for four minutes. Carbon electrode stuck. Pulse 84 throughout. The patient came out with no bad results. Tumor unchanged. Pain removed, and general good health continues. In progress. To decide with certainty, two years' time should elapse.

November, 1877. Doing well.

1884, March 25th. Dr. Wheeler writes, March 23d, that the tumor is of the size of a small lemon squeezed of its juices, and that Mrs. S. is happy beyond description.

March 28th. Examined Mrs. S. in the presence of Drs. Wheeler and Weeks, and found as above. Dr. Warner had examined the case for a fibroid, not knowing what it was, and could find none. Said afterwards: "It was a triumph."

1887, March 17th. No tumor found.

CASE L.—Resumé, 1877. Large abdominal fibro-myoid. Tri-lobed. First application caused a diminution. After the second hemorrhages checked and health restored. Subsequently a recurrence. Another operation. Better results. 1886, two tumors, each the size of a man's gold watch. Operator, Cutter.

1875, March 2d, Mrs. R., widow, aged 42 years, resides with her sister temporarily in C—. Her fibroid had existed at least eight years. She had suffered from frequent excessive and exhaustive hemorrhages, and was much reduced in flesh and strength therefrom. She had a pallid countenance and a waxy look. Because of physical weakness and inability to perform duties that require bodily activity, she was reduced to a state of dependence upon others. Her appetite was poor and digestion weak. Around the body at the navel the measurement was thirty-four inches. The tumor

was abdominal, trilobed, large, and very dense in structure. A large globar lobe lay towards and in the right hypogastric region. Relief had been sought from many physicians without success, and she was quite ready to submit to the experiment of electricity, as her life was miserable and she felt keenly her dependence. Indeed, she had sought the removal of the tumor by laparotomy, and at one time previous her physician states that she got all ready for this latter operation and the surgeon, Burnham, of Lowell, had his instruments laid out to make the section after she was anesthetized, but fortunately gave it up.

First operation.—On the date given above, in the presence of Drs. Wheeler, Shackford, and Weeks, of Chelsea, and Mr. Asahel H. Shurtleff, of Boston, ether was administered and the battery applied to the growth. One electrode was introduced four inches deep into one lobe on the right and the other electrode was penetrated into the opposite lobe on the left side. The full current was continued for five minutes. This application was well borne and its immediate effect was not marked by any systemic or local disturbance.

Second operation.—March 25th she measured thirty-two inches vice thirty-four inches around the navel on March 2d. This indicated a diminution. Tumor more movable. She easily got over the first operation. At 12 M. this day the battery was re-applied in Dr. Wheeler's presence. The electrodes were passed through the large right lower and lateral lobe. On recovering from the ether, she expressed herself as feeling prostrated and in severe pain. A subcutaneous injection of the sulphate of morphia was given immediately, under the influence of which she readily passed with relief.

April 2d, there was tenderness over the points of puncture. Less metrorrhagia. Appetite poor. Complains of darting pains through the body. On recovering from the effects of the operation she felt so much better that she returned to her home in a distant State where she lived alone in her own house, doing her own work and maintaining herself by her own industry.

1876, May 16th, she presented herself at office, looking very well and in good spirits. The interlobar furrows had broadened and deepened. Tumor movable and arrested. No menorrhagia. Measurement around the body at navel was thirty-two and one-half inches. The increase of half an inch is easily accounted for by the increase in flesh of the body. She regarded the two operations of value to her, inasmuch as now her condition was one of independence and self-support, vice invalidism and dependence.

1877, January 4th, says that she was doing well up to three months ago, when she suffered from a severe attack of peritonitis which has lasted in its effects up to the present time.

She complains of great pain in the right side of the abdomen. Constipation, "heats and flashes" all over the body trouble her much. (Possibly due to "change of life.") General appearance very good. No pallor. Countenance of a healthy brown. She

thinks the tumor increased in size since October, 1875. Since her present attack of peritonitis, she has numbness and inability to move her lower limbs, and has a desire to pass her urine often.

She strongly urges the removal of the tumor by abdominal section.

Third operation.—January 17th, 1877, the battery was applied for the third time. The electrodes were passed in on each side opposite to one another; the current was maintained for *six* minutes. The right-side electrode was entered with the expenditure of considerable force, while the left-hand electrode went in readily.

January 19th, she is suffering much with pain over the right puncture. February 8th much better. Returned to Maine. Is pleased with this application more than any other. It was very profound in its effects. August 8th, 1877, is working hard. Increased in flesh. General health excellent.

October 18th, thought the tumor diminished. In good health. 1879, December 30th, twenty-nine and three-fourth inches supine position; standing posture twenty-nine inches round the navel. Over the right groin a bulging, perhaps it is a hernia. Complains much of severe pain in the back, so much so that "it seems as if I could not live." Ready for extirpation. Uterus does not seem to be involved at all.

Fourth operation.—1880, January 26th. Present, Drs. J. Marion Sims, of New York; Gilman Kimball, of Lowell; M. G. Wheeler, of Chelsea; Boardman, of Chelsea; Prof. Reynolds, of Boston; W. H. Baker, of Boston; H. O. Marcy, of Boston; A. L. Norris, of Cambridge; W. S. Brown, W. F. Stevens, of Stoneham; J. A. Douglass, of Amesbury; Weeks, of Chelsea, and Warner, of Boston.

Ether. Abdominal penetration. 'Ten minutes' current. 95–115 pulse. Tumor very hard and dense.

Dr. Sims expressed himself satisfied, but thought the needles too long. Punctures each made with lancet.

1880, March 2d, twenty-nine and one-fourth inches. Has pain in right groin. Chills. Tumor hard. Appetite not good. Operation took good hold of her. Belladonna plaster to bowels. Is unwell a good deal. Never so before. Has taken ergot.

1886, August 5th, saw her. Tumors the size of man's gold watch, one each side of navel. Calls herself cured.

1730 BROADWAY, March 22d, 1887.

CORRESPONDENCE.

BREUS' FORCEPS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—Will you allow me to dispute the claim made by Dr. H. D. Fry, in the March number of the JOURNAL, that the Breus forceps is a simple and efficient substitute for the "complicated" Tarnier. This is true in a very restricted sense only, since in action the Breus is scarcely more than an ordinary Simpson's forceps without the pelvic curve.

In reading Dr. Breus' exhaustive and interesting monograph on pelvic-inlet forceps,¹ one is not a little surprised to find an

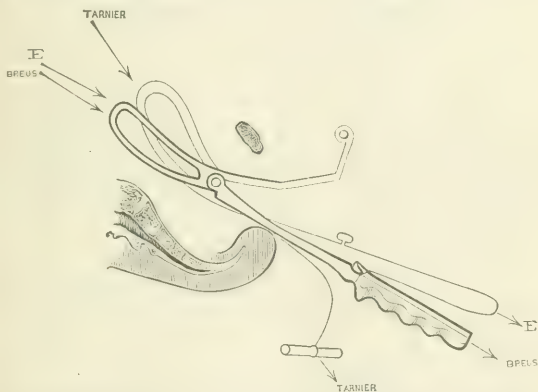


Diagram Showing Tarnier and Breus Forceps and the Axis of Traction of each.
The upper arrow is also the axis of the inlet.

obstetrician who fully comprehends the principles of the Tarnier construction designing as an improvement a forceps which misses its fundamental ideas. Breus (p. 57) lays great stress on freedom of motion for the head. Yet his model permits motion in one direction only. It admits of *no rotation*. It prevents that free play and combination of all movements which is the distinguishing characteristic of the French instrument.

Again, it is not truly an axis-traction forceps. Pulling on its

¹ "Die Beckeneingangszangen," Dr. Carl Breus, Wien, 1885.

handles cannot make traction in the axis of the superior strait. The three arrows in the diagram, which is compiled from Breus' own figures, show the direction of the force exerted with the three kinds of forceps. From this outline, we see that the Breus acts as a straight forceps. The traction is more nearly in the axis of the inlet than simple pulling on the handles of an Elliot forceps would result in (E. E.), but is still wide of the Tarnier angle.

ROB. L. DICKINSON, M.D.,

Lecturer on Obstetrics, Long Island College Hospital.

BROOKLYN, March 16th, 1887.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, February 15th, 1887.

The President, DR. P. F. MUNDÉ, in the Chair.

FINE COPPER WIRE SUITABLE FOR PLASTIC OPERATIONS.

DR. HUNTER showed a specimen of soft copper wire, which he had had made, and the advantages of which were that it was both softer and stronger than silver wire, and was so fine that it could be threaded in a needle. It did not become tarnished by long contact with the tissues. It cost about twenty cents a quarter-ounce, which was a great advantage pecuniarily.

DR. HANKS said that he had used this wire in several operations with good results.

DR. LEE had not been equally pleased with the wire, as he had found it harsh and brittle. He asked if the fact that it resisted oxidation constituted any positive advantage for it over silver wire.

DR. HUNTER said that he did not lay so much stress upon this, as he did upon the superior strength of the copper wire.

DR. HANKS thought that it was a great advantage to have a wire so flexible that it could be threaded in and exactly fitted to the eye of a needle.

THE PRESIDENT asked if copper wire did not sometimes turn green when left in situ for some time.

DR. HUNTER said that he had not noticed this change. In reply to a question from the President, he acknowledged that it was not so easy to remove copper, as it was silver sutures.

DR. EGBERT H. GRANDIN read the following paper on

THE VALUE OF ELECTRICITY IN CERTAIN OF THE DISEASES OF WOMEN,
AND IN UTERINE INERTIA.

"It is only within the past few years that a number of gynecologists, dissatisfied with the results obtained from the time-hon-

ored routine methods of treatment, have turned their attention to the value of electricity. The first to write a distinctive monograph on this subject in this country was Paul F. Mundé, and, since its appearance, impressed by the statements therein made in regard to the therapeutic effects of this agent in the treatment of certain of the diseases of women, I have resorted to it, and still do, as a routine measure, and my object is to state briefly, as the time allotted to me necessitates, my own impressions in regard to its worth and its applicability.

Into the technique I do not propose to enter at all, since this has been amply discussed in the paper referred to. I would simply state that I have followed Mundé's general directions and found them lacking in no respect, and further that I use electricity in a purely empirical manner, not knowing specifically why or how the current acts, resting satisfied with the knowledge as to what it accomplishes as regards results.

As a general introduction to the remarks which follow, I would state that I have never ventured to use this agent in the presence of any specially acute process, and that, in the selection of the kind of current to be used in any given case, I always keep before me the end I have in view, whether to stimulate (the faradic current), or to cause absorption or sedation (the galvanic—constant or interrupted).

Since I propose to limit my remarks purely to those affections in which I have resorted to electricity, I would state at the outset that I will consider here the results to be obtained from this agent in atonic amenorrhea, subinvolution, areolar hyperplasia, oöphoritis and so-called oöphoralgia, subacute and chronic exudations around the uterus (pelvic peritonitis, peri-oöphoritis, peri-salpingitis). The treatment of fibroids is entirely outside the scope of this paper.

In the treatment of amenorrhea dependent on atony of the sexual system, and not on chlorosis; that is to say, in the variety of amenorrhea which is seen so frequently in emigrants only recently landed, and to which the descriptive phrase "amenorrhea from change of climate" has been applied, I know of nothing so valuable as faradism. Very frequently, in these cases, the bin-oxide of manganese will have the effect of bringing about the return of the menstrual flow, but in other instances it will not, as in two of which I have cognizance. Here faradism of the uterus and its adnexa, resorted to during the period of the molimina, will not only restore menstruation, but regulate it. The genital system is apparently simply lacking in tone, and this the faradic current furnishes.

In speaking of subinvolution, I would not be understood as at all underestimating the various methods of treatment which are routine measures with all of us. If a lacerated cervix, beyond the first degree, exists, the plain indication is to sew it up and

thereby remove a causal factor; for the elevation of the uterus the removal of strain from the suspensory ligaments, the regulation of the circulation, the tampon still finds its application, as also glycerin for its depletant effect, or iodine, for its alterative; further still, if there is anything in the uterus which keeps up congestion, this is still to be removed by the curette. Electricity does not aim to supplant these methods. It comes in as an adjuvant, and a very powerful one at that. What I maintain is that the galvanic, or mildly interrupted galvanic current, used as a routine measure every other day for about fifteen minutes, will decrease the congestion, will check the hemorrhages and the leucorrhœal discharges, in far less time than any other method, alone or combined, can possibly do—at least such is the inference which I reach after a trial of electricity for the past year, and a trial of all the other routine methods for a number of years before my attention had been called to the value of electricity. Formerly I did what I was taught to do—made applications to the endometrium, painted the vault with iodine, tamponed with glycerin, ordered the hot douche. To-day I am perfectly satisfied with electricity, followed by the glycerin tampon still, and the douche. In other words, I have substituted the electric current for the intrauterine applications, and, I am satisfied, to the benefit of my patients. Be it understood, however, that when I say I have rejected the applicator, I am speaking purely of cases where there exists only hypersecretion of the endometrium (catarrhal endometritis). I could not do without it in other forms of endometritis.

In speaking of areolar hyperplasia, I would again emphasize the fact that I do not propose electricity as a substitute for other well-tested and valuable methods. Here again it is as an adjuvant method that I speak of it, and with less positiveness, I must frankly admit, of its value, than in case of subinvolution. That it will soften down, to use a common phrase, a hyperplastic uterus, as, for instance, the wedge-shaped excision will do, I cannot claim; that it will check the hemorrhages and leucorrhœas which frequently complicate the condition I do not state, for it is here, I believe, that we must often necessarily resort to the curette and to intrauterine applications; but that the interrupted galvanic current, the current which I have used, will alleviate the hystero-neurotic symptoms with which women who own hyperplastic uteri burden our ears, I am in the position to affirm. Electricity does this also whilst allowing us to dispense with the assafetida and valerian with which many of us are accustomed to dose such patients. Possibly, further experience with electricity, in the routine treatment of hyperplasia, may lead me to claim a wider sphere for it in the results to be obtained.

In oöphoritis and oöphoralgia it is my belief that we possess in galvanism an agent of the greatest possible utility. It may be

well to define what I mean by these terms. By oöphoritis I mean enlargement of the ovary from congestion. It has its analogue in simple orchitis. To the touch the organ is enlarged, exquisitely tender, sunk to a lower level in the pelvis purely from excess in weight, not adherent, no trace of exudation around it. By oöphoralgia I mean that condition of the ovary which we cannot diagnosticate by touch, which we assume exists because we can find no other morbid factor which will explain the main symptom—pain in the ovarian region. The term is a cloak for our ignorance, perhaps, but such a cloak is convenient to the gynecologist, even as is the term “malaria” to the general practitioner. Now, the effect of a mild, very mild, constant current in both these conditions, particularly the former, is often simply marvellous. One moment the woman is in great pain, and the next she is not. The relief from pain may not be for long, but is it after any other methods of treatment at our disposal? Take, for instance, the blister which I used to order at once in this condition. It simply alleviates the pain for awhile and then adds another pain—emanating from itself—to the original. Further still, this blister not infrequently affects the urinary system unpleasantly. Electricity is free from these sequelæ, and it just as surely relieves the pain and, in case of oöphoritis, diminishes the congestion, and shortly restores the organ approximately to the normal.

When I pass finally to the gynecological topic which I consider last, and which I call for convenience's sake chronic pelvic peritonitis, I feel that I am treading on insecure ground because it is only partly made, owing to the lack of accurate statements from our friends the pathologists. I exclude at once the ovary enlarged by fluid contents and bound down by adhesions, the tube distended by fluid and bound by adhesions. Here I do not question but that ultimately they will of right belong to the laparotomist. Electricity will in part relieve the symptoms, but as the ovary and tube continue to distend, I believe it the wiser and more conservative policy to remove these organs rather than to wait for them to rupture. In these instances, we subject the woman to present risk to save her from future risk. The conditions to which I desire to refer here I believe I can best describe by supposing a case such as we all of us see very frequently: A widow with several small children dependent on her exertions for their daily bread consults me, we will say, for the relief of intense pain radiating over the abdomen, into the lower part of her back, and down her limbs. The pain is intensified at the menstrual periods, when she is practically incapacitated from work. (I purposely make this suppositional case strong.) On examination, I find the pelvis filled with remnants of an antecedent attack of pelvic peritonitis: the vaginal vault solid, the uterus retroflexed and immovable, nothing to be felt in the lateral regions of the pelvis except the same remnants of exudation which I detect posteriorly and possibly anteriorly.

Now, shall I advise the patient to have her abdomen opened, the adhesions broken up, the conglomerate mass of tubes and ovaries extirpated? Gentlemen of large experience will answer affirmatively and say that I can thus alone cure my patient. From my standpoint of lesser experience I would object to the broad use of the word cure in these instances, and would beg to substitute the word alleviate. I am credibly informed that a number of the younger gynecologists are beginning to be consulted by patients on whom laparotomy has been performed without resulting cure and without resulting alleviation for long. Such has not as yet been my fortune, but I have in mind a woman whose pelvis presents the characteristics which I have noted above, and who, not so many years ago, was treated by one of our most distinguished laparotomists after a routine fashion for many months, to hear finally that laparotomy was her only resource. The idea did not suit her fancy and she came to me. I have done what the laparotomist failed to do—I have used a mild galvanic current, and to-day, after a few months' treatment, she is most of the time free from pain, and yet has not been subjected to the risk of losing her life. Have I cured her? No, and I do not believe that I ever can. I have, however, relieved her symptoms, and, when they recur, as they will, I can do so again, and yet not for a moment has her life been risked in the slightest.

In the conditions, then, to which I would apply the general inclusive term chronic pelvic peritonitis I would ask a trial, and a faithful one, of the constant current, before resort to laparotomy. True enough, the technique of the latter is so nearly perfect that the risk to life is very slight, and the laparotomist finds some justification in pointing with pride to his shelves loaded down with successfully *removed* tubes and ovaries. But is the certainty of cure so well established as to justify even the slight risk? I think not, and I claim that the chance of alleviation is as great, if not greater, by electricity than by laparotomy, and, to quote the words of a German gynecologist—Rheinstaedter—'he is not the best gynecologist who operates the most, but he who best relieves his patients without risk to their lives.'

In the few moments still at my disposal I would refer to the value of electricity, faradism, in a single obstetrical complication where it has rendered me signal service. In obstetrical treatises, sufficient stress is not, I think, laid on the value of this agent in uterine inertia, and where reference is made to it the agent is dismissed with the statement that the apparatus is rarely at the disposal of the accoucheur. It ought, however, to be in the obstetric bag of every practitioner, as it has been in mine for many months, and in the shape of the GaiFFE or other so-called pocket battery the space requisite amounts to nothing. To call renewed attention to the value of the faradic current in uterine inertia alone, I will cite the salient points of one of the two cases in which it was of inestimable

value to me. The case occurred in my service at the Maternity. When I saw the patient, the house surgeon informed me that the first stage had been completed for five to six hours, that the pains had entirely ceased, and that all his endeavors to re-awaken them had failed. He had used every means except ergot, which I positively forbid before the completion of the third stage. The woman was a primipara, the labor was premature by about six weeks, the fetal heart-sounds had never been heard. Her general condition was good, the vagina and uterus formed a single cavity, the fetus being suspended, as it were, by the cord within the uterine part of the cavity. The condition existing was one of complete paralysis of the uterus, and there was simply lacking nerve-force to end the labor. I at once placed one electrode of a faradic battery in the patient's hand, and with the other massaged, as it were, the uterus, using a weak current. In ten minutes the pains recurred, and in about fifteen the third stage was spontaneously completed. This case requires no comment.

Other obstetrical conditions in which I have resorted to faradism with brilliant results I propose to relate at some future time."

DR. HUNTER said that he had had a wide experience with galvanism in the treatment of such cases as were described by Dr. Grandin, and had found it very useful. He had frequently noted that it not only relieved the pain in ovarian neuralgia, but also exerted a marked sedative effect, as shown by the fact that the patient slept soundly after the treatment. He was accustomed to use Barrett's galvanic battery, and always with good results in cases of ovarian disease, although when the tubes were affected he doubted if it even relieved the pain. He had formerly resorted to faradism in the treatment of amenorrhea, introducing one pole into the uterine cavity, and applying the other externally, but he had abandoned this procedure as useless. It had been employed at the Woman's Hospital several years before, but although the menstrual flow was certainly increased while electricity was used, the patient soon relapsed as soon as the treatment was discontinued. The results were never permanent.

DR. PEIRCE recalled two cases in which he had cured amenorrhea due to change of climate. In cases of oöphoralgia, he had obtained speedy and happy results, by the use of the galvanic current.

DR. LEE said that he had employed electricity in cases in which there was apparently premature atrophy of the uterus and ovaries, with scanty menstruation and excessive development of adipose, and thought he had obtained decided temporary improvement from the use of the galvano-faradic battery. He was accustomed to introduce one pole into the uterus and to place the other over the abdomen, the treatment being begun four or five days before the appearance of the menses and continued until the flow appeared. The electricity always seemed to relieve the patient's discomfort and to increase the flow.

The speaker added that he had found the galvanic current efficient for the relief of the persistent pelvic pain that sometimes remained after the removal of the tubes and ovaries. He was

sorry to say that, although the patients upon whom he had performed this operation had all recovered, several of them had not been relieved of their pain; this pain had been mitigated by electricity. He had just obtained a good result with this agent in a case of oöphoralgia associated with insomnia; a laceration of the cervix had been repaired with the hope of relieving the patient's condition, but in vain. The pain began three or four days before the monthly flow and lasted throughout the period. No enlargement of the ovary could be detected. The patient was completely relieved by the constant current. Dr. Lee concluded by saying that he was not such an enthusiastic believer in electricity as Dr. Grandin, and, moreover, its use involved a good deal of trouble; he had relieved patients by this treatment, but had not cured them. He had had no experience with this agent in obstetrics.

DR. HARRISON said that his experience with electricity was limited. He had used both currents in the treatment of amenorrhea, but had never met with any success. Ovarian pain could be relieved temporarily by galvanism. He had once caused a pelvic abscess to rupture into the rectum by passing an electrical current through it. He had had no experience with it in obstetrics. Dr. Preston, of Virginia, had reported a number of cases of post-partum hemorrhage in which he had used it successfully.

THE PRESIDENT said that the value of faradism in post-partum hemorrhage had long been recognized; Dr. Alexander Murray had twelve years ago reported many successful cases.

DR. CLEVELAND remarked that he had used the faradic currents for months in one of amenorrhea, without effect. He recalled only one patient in the Woman's Hospital who received permanent benefit from this treatment. He had used galvanism in ovarian neuralgia with success.

DR. MORRILL cited a case of ante flexion in which a stem-pessary had long been worn without giving relief. He had tried every remedy without success. Having been summoned on one occasion when she was in great pain, he employed faradism, which gave her great relief. He then used the faradic current regularly for several months, applying one pole to the cervix uteri and the other over the fundus; while under this treatment the patient menstruated without pain. In another instance he used electricity successfully to relieve the persistent pain after removal of the uterine appendages.

DR. HANKS agreed with Dr. Lee in the opinion that the use of electricity in office-practice was often very inconvenient, involving as it did the expenditure of a good deal of time and trouble. He had used it with benefit in cases of ammenorrhea due to undeveloped uterus, and had even seen the flow come on during the séance, while by constant application of the faradic current the regular period had become established. He had not tried it in cases of peri-uterine inflammation. The faradic current never failed to cause uterine contraction, and was an invaluable agent in post-partum hemorrhage due to inertia uteri. He cited a case of a patient of Dr. Bozeman's whom he had seen in consultation; there was paralysis of the lower third of the corpus uteri and all the cervix, and a consequent alarming hemorrhage. He passed one electrode into the uterus and placed the other over the sacrum;

within a few minutes the uterus contracted firmly and the danger was averted. He had used electricity in half a dozen similar cases and had always seen the uterus contract at once. He always carried a small battery in his obstetric case.

DR. NILSEN had always used faradism in cases in which he desired to obtain stimulation. He had never had any success with it in the treatment of amenorrhea due to non-development of the uterus, but had often caused a return of the menses in foreigners whose flow had been temporarily arrested on coming to this country. In one instance, following a suggestion by Dr. Noeggerath, he had applied a strong faradic current to the wrist of an amenorrheic woman, who complained of pain in that location; she began to flow normally. One patient who had formerly had attacks of hystero-epilepsy at each period, had now been treated for eight or ten months with the constant current, during which time there had been no recurrence of the attacks. Another patient had been treated for seven years without benefit, her trouble being pain and obstinate vomiting, which continued after the period. The ovaries and tubes were enlarged and tender. She had now been under treatment with electricity for a year and was much better, the vomiting having ceased entirely. The positive pole of the battery (not covered) was applied to the vaginal fornix, while a patient held a sponge in the hand; a current of seven milliampères was used.

DR. FREEMAN said that his experience with electricity extended over a period of twenty years. He would not hesitate to apply electricity to the pelvic organs even if acute inflammation was present. He formerly employed faradism frequently, but during the past three or four years he had abandoned it for static electricity, which he had found to be quite as beneficial and more agreeable to the patient. He had nearly always been successful in the treatment of amenorrhea, the menses frequently appearing a few hours after a séance; he was accustomed to place one pole over the ovarian region and the other over the sacrum. In one instance the patient, a Norwegian, was weak and anemic and had not menstruated in six or eight months. Within three or four weeks after beginning electrical treatment she regained her health and strength, her menses returned regularly, and she was soon cured. The speaker cited another case, which had rather a negative bearing. A young woman came to him, stating that without reason she had missed two periods. He used electricity for a month and then discovered that she was pregnant; five months after she was delivered. In this case the static current did not seem to affect the pregnancy. He thought that if electricity was more frequently employed, less opium would be given for the relief of pain.

DR. COE said he had been much interested in Dr. Lee's statement regarding the beneficial effect of electricity when used for the relief of persistent pain after laparotomy. This experience, when compared with that of the reader of the paper, who had obtained such good results in cases which were probably similar to those in which Dr. Lee had removed the appendages, went far to prove that the pain in question was of such a character that it would sometimes not be relieved by an operation. This pain, as the speaker said he had insisted on several occasions, was doubtless due largely to peritonitic adhesions around the tubes and ovaries, and we could not positively predict its disappearance after

laparotomy. The important question which was presented was this: If this pain is relieved by galvanism *after* laparotomy, why not give it a fair trial before resorting to that extreme measure?

DR. MURRAY said that he had used electricity in one case of extrauterine pregnancy, causing the death of the fetus; he had always employed it successfully to relieve the pain of pelvic peritonitis.

THE PRESIDENT said that he had little to add to the experience detailed in his paper on "Electricity in Gynecology," published in the October number (1885) of the JOURNAL OF OBSTETRICS. He had used galvanism constantly during the past ten years; faradism he regarded as more limited in its usefulness, being chiefly applicable to cases of amenorrhœa. Yet even here he had found that the flow only continued while the patient was under treatment. He agreed with Dr. Hunter in regard to the sedative or almost anesthetic effect of the constant current. He was at the time treating a patient with severe ovarian neuralgia, whose ovaries were enlarged, prolapsed, and very tender. After he had applied the constant current for three months, the change was striking; she had had no pain since the first period after beginning treatment, although the local condition remained unaltered. On the other hand, he had treated a similar case in which electrical treatment seemed to offer a good prospect of relief, but none was obtained. He had certainly seen much benefit result in cases in which the ovaries and tubes were only moderately enlarged, but were surrounded by adhesions. A lady with well-marked ovarian disease had repeatedly refused laparotomy and finally came under the speaker's care. He applied galvanism every day, and so much improvement followed that now there was no thought of an operation. In reply to a question from Dr. Hanks, he said that he had not yet tried systematically the effect of electricity in cases of uterine catarrh, but intended to do so. As regards the alleged trouble of using electricity, he thought that if the batteries were in order, and the nurse was properly instructed about keeping them in readiness, there was only little more required than in the usual routine gynecological treatment. By applying a large flat sponge or wet towel to the abdomen, the same result could be obtained as with a smaller electrode and in a shorter time.

DR. HUNTER asked Dr. Freeman if he had obtained the same results from static electricity as he did from the galvanic current.

DR. FREEMAN replied that it was much the same, and that it was much more convenient to use. His routine practice was to place every gynecological patient upon the insulated stool for a few minutes before treating her, as she always had less pain during and after the examination.

DR. NILSEN referred, in connection with persistent pain, to a case of oöphorectomy for hystero-epilepsy, the patient having no more attacks after the operation, until she came to his office some months later and was examined; he found a tender spot at the site of one of the pedicles, pressure on which gave great pain. The patient returned home, and had an attack similar to the former ones, showing that the local irritation still persisted, but she had had no more.

THE PRESIDENT cited a case similar to the one described by Dr. Nilsen, in which the pelvic pain returned two or three weeks after removal of the appendages, and on examining her that very day

she had had an attack of hystero-epilepsy like those which she had before the operation. He was sorry to say that he had several cases in which pain persisted after laparotomy, and he proposed to try the effect of electricity upon them.

CYST OF THE ANTERIOR VAGINAL WALL.

DR. MCLEAN reported the case of a lady who came to him stating that she had a tumor in the vagina, of two years' standing, which had been diagnosed as cancer. He found a cystic tumor about the size of a small apple that occupied the position of an ordinary cystocele, and indeed looked like one. He enucleated the sac entire. He had mentioned the case because he was surprised to find how little reference was made to these growths in recent editions of English works on diseases of women.

DR. LEE said that he had seen several similar cysts both on the anterior and lateral vaginal walls. He enucleated one the preceding summer that had been pronounced cancer by several physicians. On looking up the literature of the subject, he had found quite a number of German references.

THE PRESIDENT stated that ten years before he had reported a similar case to the Society and had at that time collected fifty cases.

DR. HANKS had cured such cysts by simply incising and injecting iodine into the sac; they did not refill.

DR. HUNTER had found that they sometimes refilled after being treated in the manner described by the last speaker; he had sometimes been obliged to perform a radical operation subsequently.

DR. LEE thought that a thin-walled cyst containing watery fluid might be cured by simply snipping off a part of the wall and cauterizing the interior of the sac.

DR. CLEVELAND had seen several cases of vaginal cysts (nearly all being on the anterior wall) in the Woman's Hospital; they were all cured by incision, followed by applications of iodine and carbolic acid.

DR. HUNTER said that in nearly all the cases that he had observed the cyst was situated in the posterior wall.

DR. MCLEAN said that he had referred to cysts of the anterior wall.

THE PRESIDENT remarked that cysts of the anterior vaginal wall were not very common; he had seen several, one of them being in a patient who came to the clinic wearing a pessary for supposed cystocele. He had removed one from a pregnant woman ten years before, thinking that it might cause dystocia; a piece of the sac was excised and the cavity packed. It did not recur, and no reaction followed the operation.

TWO CASES OF EXTRAUTERINE PREGNANCY SUCCESSFULLY TREATED BY ELECTRICITY.

Dr. Harrison narrated the following cases:

Case I.—This case occurred in the practice of Dr. R. C. M. Page, and I am indebted to him for the opportunity of studying it carefully, as I met him in the case no less than seven times. Dr. Page saw the patient for the first time, October 1st, 1884. As she in-

formed him, she was twenty-seven years of age, had been married four years, and had given birth to two living children. The last child was born in October, 1883. Four months after the birth of this child she menstruated, the period recurred regularly up to September 6th, 1884, when she had but a slight show. September 20th she had several chills, followed by uterine hemorrhage, which lasted for three days. October 4th, met Dr. Page for the first time, at which time vomiting was a very distressing symptom. Though extrauterine gestation was suspected, no positive diagnosis was made. October 17th, saw the patient again with Dr. Page. Obstinate and persisting vomiting has continued in spite of treatment. There was no elevation of temperature, the pulse quick and the countenance had an anxious expression. Bimanual palpation showed an elastic, movable tumor situate on the right side of the uterus, the uterus itself being enlarged. A diagnosis of tubal pregnancy of the right side was made, Dr. Page concurring in the opinion. October 19th, electricity applied, using the constant current. October 22d, electricity again used, after which all the train of morbid symptoms changed in a most marked and gratifying way for the better. The electricity was applied on three subsequent occasions as a matter of precaution, but was doubtless unnecessary, as the fetus was undoubtedly killed on the second application. The pregnancy dated from about the middle of August, as the last menstruation occurred early in that month.

Case II.—I was called May 28th, 1886, to see Mrs. K., from whom I ascertained that she was thirty-one years old, and that seven years previously she had given birth to a child at the seventh month of gestation. She had always menstruated regularly, though she had suffered always more or less from dysmenorrhea. At different times she had been under treatment for uterine disease. She menstruated for the last time the latter part of February. A few days before I saw her, believing, as she did, that she was pregnant, she consulted a physician in the hope and expectation that, if she concealed from him the facts in regard to her pregnancy and complained of symptoms referable to the womb, he would pass a sound. Her belief proved to be well grounded, the doctor did pass a sound into the uterus, in consequence of which she had a considerable flow of blood. On examination, I found the uterus enlarged, and on its right side what appeared to be a perimetrial exudation. I was the more inclined to assume this, as there was some elevation of temperature. As the flow continued I introduced a small tampon, thinking a miscarriage was impending. At this time I thought the gestation was uterine. The next day, on removing the tampon I found there had been no discharge of clots and the hemorrhage had ceased. A more careful examination by bimanual palpation showed a somewhat rounded, soft, elastic tumor, tender on pressure, which was not fixed. I asked Dr. Page to see the case in consultation with me, and he

arrived at the same conclusion as I did, that it was a case of tubal pregnancy. A galvanic current was passed through the tumor in the same manner as in the other case, with the same results.

DR. LEE called attention to the fact that, when an extrauterine pregnancy was surrounded by inflammatory deposits, the electric current seemed to act more slowly than usual. When we suspected such a condition, he thought that it was always advisable to introduce one pole into the rectum rather than into the vagina, as was usually done. He had seen two such cases in which no result was obtained when the pole was passed into the vagina, but the tumor rapidly became smaller as soon as it was inserted into the rectum.

DR. HUNTER asked Dr. Harrison why he had used galvanism in preference to faradism.

DR. HARRISON replied that he had simply followed the directions given by Dr. Rockwell in such cases.

THE PRESIDENT said that he had reported a case two years before in which one pole was introduced into the rectum, and twenty-four cells were used, with interrupted shocks; the fetus was killed, but the patient received such a severe shock that she was collapsed, and was restored only after receiving repeated hypodermics of brandy, ether, etc.

DR. HANKS asked the reporter if he was sure of the diagnosis in the second case. Might it not have been a case of early miscarriage?

DR. HARRISON replied that the patient had all the symptoms of pregnancy, especially enlargement of the uterus, and there was a discharge of a decidual membrane in all probability.

CASE IN WHICH THE PULSATING CORD COULD BE FELT THROUGH THE ABDOMINAL WALL.

DR. NILSEN reported the case of a pregnant woman whose abdominal and anterior uterine walls were so thin that the funis could not only be distinctly felt to pulsate, but it could be isolated between the thumb and finger.

DR. PEIRCE said that he had been called to see the wife of a physician; the latter was alarmed because, when his wife was seven or eight months pregnant, he could feel the fetus so distinctly that he thought it a case of extrauterine fetation. The speaker found the condition similar to that described by Dr. Nilsen, and could feel the cord pulsating.

DR. NILSEN said that he caused the mother to hold the cord between her own fingers, and count the pulsations of the fetal heart. He was surprised to find how thin the uterine wall was.

THE PRESIDENT said that he had referred to this condition in his monograph on "Obstetric Palpation." He had seen a case of cyst of the mesentery in which the patient's abdominal wall was so thin that the vessels of the cyst could be distinctly recognized through it.

Stated Meeting, March 1st, 1887.

The President, DR. PAUL F. MUNDÉ, in the Chair.

TAIT'S ABDOMINAL BANDAGE FOR USE AFTER LAPAROTOMY.

DR. WYLIE presented the above bandage and recommended it highly as a means of prevention of ventral hernia after abdominal sections. He stated that it was Mr. Tait's rule to cause his patients to wear such a bandage for at least one year after operation. Personally he was inclined to think that the bandage would not prevent the occurrence of ventral hernia, but that it was mainly of value from the comfort it gave to the patient, and, in a measure, in that it relieved strain from the abdominal incision. The prevention of ventral hernia would lie rather in the accurate manner in which the incision into the peritoneal cavity was sutured, and he laid renewed stress on the desirability of sewing up separately, and of bringing carefully together the edges of the severed fascia of the recti muscles.

DR. SIMS stated that his practice was similar. He had seen two cases of ventral hernia, both in very stout women. In both these cases, all the tissues had been included in the sutures. One of these patients did not follow his stringent injunction in regard to wearing the bandage. He was now in the habit of using the Lambert stitch, and in case the patient was excessively stout, he advocated placing small rubber drain-tubes between each stitch, in order to prevent accumulation of fluid between the abdominal walls and the peritoneum.

DR. LEE stated that formerly he had much trouble from yielding of the cicatrix after his abdominal sections, and that in one instance he had seen hernia, but nowadays, since insisting strongly on the wearing of a bandage, especially where the removed tumor was large and the previous abdominal distention excessive, he met with no such trouble. He expressed himself as rather favoring an elastic bandage than one with hooks, for the reason that the support given by the former was apt to be more equable.

DR. PERRY referred to a case in which there had occurred spontaneous cure of a large ventral hernia: He had removed an ovarian cyst from the patient, aged 62; on the thirteenth day she was discharged cured. Several weeks afterwards he saw her, and she had a ventral hernia at least four inches in length. He lost sight of her for one year, when she returned, and, to his surprise, the hernia no longer existed. He referred to the case as being rather unique, in that the patient had never worn an abdominal supporter.

DR. LEE was convinced that in this country we did not insist strongly enough on the necessity of our patients wearing an abdominal bandage for a long time after laparotomy.

DR. CHAMBERS stated that it was Dr. Thomas' custom and his own to use a somewhat similar bandage to the one presented by Dr. Wylie, and that they always insisted on its being worn at least one year.

DR. WYLIE reiterated his statement that he did not advocate

the bandage in place of careful operative procedure. On the contrary, it was the latter which would prevent the occurrence of ventral hernia, and not the former. He was convinced that in the past sufficient care had not been taken to bring the divided tissue separately and exactly together, in particular the *sheath of the rectus abdominis*. He was inclined to think that hernia was of more frequent occurrence than was the general belief. At least five to fifteen per cent of all women would be found to have hernias, if we should follow up our cases.

DR. CHAMBERS stated that for the past two years it had been Dr. Thomas' custom to sew first the peritoneum, and afterwards the muscles and fascia, and that since he had had no hernias.

THE PRESIDENT inquired as to whether the peritoneum was first sewed with a running catgut suture or not, and if the muscles and fascia were afterwards separately united and then the skin.

DR. CHAMBERS replied in the affirmative, and said further that, if the patient were very stout, one to two wiresutures were finally inserted, passing through all the tissues, not including the peritoneum.

THE PRESIDENT believed this to be the proper method. It was the one he was in the habit of following. A special advantage was that when the sutures were removed the peritoneum was not at all disturbed.

DR. LEE laid great stress on the advisability of separate suture of the peritoneum, especially since thus, if a mural abscess should happen to form, the abdominal cavity is amply protected. He was satisfied that a number of years ago he had lost a patient from lack of this precaution, the pus of the abscess which had formed finding direct communication with the peritoneal cavity.

DR. HANKS called attention to the fact that the chief English operators, whose results were so excellent, were not in the habit of sewing the peritoneum separately.

THE PRESIDENT stated that the past summer he had seen Billroth perform a hysterectomy for fibroids and that the method of suturing this operator had used was very similar to that described by Dr. Chambers.

DR. LEE, referring to Dr. Hanks' statement, said that we must remember that the English operators were not dealing with American women.

THE PRESIDENT deemed this reminder peculiarly appropriate, and called attention to a remark of Czerny's, that English women had less flaccid abdomens than the Germans, very likely for the reason that the obstetric binder was used to a less extent in Germany than in England. He thought that this remark might, with equal justice, be applied to American women.

DR. PERRY was inclined to the belief that the cause of the liability to yielding of the abdominal walls was rather to be sought in anemia and constitutional weakness, conditions to which our American women were more subject than the English.

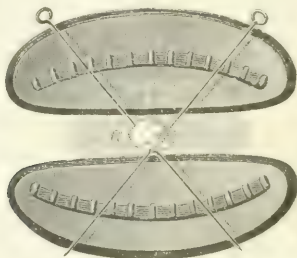
THE PRESIDENT said that a further point to be remembered was that Mr. Tait made very small incisions. After union, the line of incision was scarcely perceptible. Hernia was hardly likely to occur here, and yet it was noteworthy that we had had presented abdominal bandages devised by Tait himself.

DR. WYLIE thought that it was far easier to get accurate union in patients whose abdominal walls were relaxed than in those where they were tense.

DR. HANKS said that analogically he could not see why hernia should not follow a small incision in the abdominal wall.

HARD-RUBBER PLATES FOR PROTECTION OF ABDOMINAL WALLS.

DR. SIMS showed the above plates, of utility, in particular, in cases where after laparotomy skewers were used. He had found that the sinking of the skewers into the abdominal walls was liable to cause trouble. The plates were easy to use, as well as to remove, whenever desired. They were furnished with ratchets into which the skewers fitted. He had used these plates after four or



five laparotomies with great relief from the pain usually caused by the skewers.

DR. HUNTER stated he had used the plates in two instances with great satisfaction to himself and comfort to his patients.

THE PRESIDENT said that the utility of the device was so apparent that absolutely no comment in their favor was requisite. He could recall a case in which he would have been very glad to have had the plates.

SELF-RETAINING TENACULUM.

DR. GRANDIN presented the above tenaculum, the invention of Dr. R. C. M. Page, of New York, and slightly modified by himself. He could recommend the instrument strongly, in particular because it would not slip or tear out as did every other tenaculum with which he was familiar. The holes in the blade were for the



purpose of attachment to a hook which could be adapted to any speculum, thus obviating the necessity of holding the tenaculum, and leaving the hand free for other manipulation. It would be found of use in trachelorrhaphy, but in particular in office practice, where the presence of a nurse was not possible or desirable.

DR. HARRISON stated that he had used the instrument, and found it of value.

DR. WYLIE called attention to an instrument known as the "angle-forceps," which he had devised and which subserved the same purpose as the tenaculum which had been presented.

OVARY ENLARGED FROM CYSTIC DEGENERATION.

DR. WYLIE showed a specimen which he had removed from a young woman for the relief of intense pain in the ovarian region. Before resorting to laparotomy he had tried other measures for her relief, but they all failed. On touch, the ovary was exquisitely tender and enlarged, and the diagnosis he had reached was simple oöphoritis. He presented the specimen as being a typical case of cystic degeneration in contradistinction to cystoma.

THE PRESIDENT inquired if he was to understand the specimen to be one of multiple cystic development or if it represented the condition present in what we were in the habit of calling chronic oöphoritis?

DR. WYLIE replied that he considered it an instance of degeneration of the ovarian stroma, and not as an ovary in the stage of cyst formation. He would not apply the term chronic oöphoritis to the condition.

DR. LEE said that on close examination he was satisfied that fully one-half of the ovary was degenerated, and he believed the case was one in which it was eminently proper to resort to laparotomy, for if it had been left alone, it would surely have increased in size.

SPECIMEN OF CYSTIC DEGENERATION OF OVARIES AND DOUBLE PYO-SALPINX.

DR. LEE presented the ovaries and tubes removed by laparotomy from a patient aged thirty-five who had been referred to him by Dr. McLaury. The patient was a great sufferer from dysmenorrhea, for the relief of which routine measures had been tried, and which suggested to his mind the possibility of the existence of pyo-salpinx. The uterus was retroverted, and to cure this he first attempted Alexander's operation. This operation failed, however, because the ligament of one side was too thin and on the other he could not find it. The amount of inflammatory deposit around the ovaries and tubes made it impossible for him to feel positive before operation as to their condition, yet he determined on the exploratory incision, and the specimens bore out the wisdom of this course, both ovaries being in a state of cystic degeneration and both tubes distended with pus. In addition to removing these organs, he had determined to do hysterorrhaphy to relieve the retroversion, but the uterus was so vascular and the hemorrhage so profuse that he desisted from this, and simply moored the uterus forward by means of Sims' drainage-tube. The case, he thought, strikingly illustrated the necessity and justifiability of making an exploratory incision in obscure cases. The patient had made a good recovery.

DR. POLK thought that the previous speaker's remark in regard to the exploratory incision was most valuable, and that latterly he had wondered if in view of the impunity with which the abdominal cavity could nowadays be opened, we ought not to aim at greater conservatism in our operations; in other words, he believed the time had come when we should pause and consider if we could not save the appendages instead of removing them, free from their adhesions, wash them, and return them to the pelvic cavity. He would not be understood as referring to cases such as Dr. Lee's. There, unquestionably, the tubes were distended with pus, and for the present, he thought, such organs had better be removed. What the future might bring forth in behalf of tubes in this, the purulent stage of inflammation (pyosalpinx), he could not say. He now had in mind cases where there was simply catarrhal inflammation of the tubes, with adhesions binding them and the ovaries to some part of the pelvis or broad ligament. Latterly, in four such instances he had contented himself with simply loosening the adhesions, of possibly freeing the fimbriæ, washing out the tubes, and returning them to the pelvic cavity (at same time freeing the ovaries from their abnormal attachments), and he believed that it was in this direction our efforts should tend rather than towards absolute mutilation. To him, a retroverted or retroflexed uterus bound down by adhesions meant the results of salpingitis, and in three cases he had been gratified by the results he had obtained by loosening the adhesions binding the uterus, tubes, and ovaries in abnormal positions, washing the tubes when needed, but removing nothing. To keep the uterus forward, he had added Alexander's operation, all at one sitting, and each patient had done well.

DR. WYLIE differed with Dr. Polk, and believed that where the adhesions were extensive the organs had better be removed. To his mind adhesions were not the disease. It was the adherent organs which were at fault. If they were not removed, if the adhesions were simply broken up, the same cause remained to produce new adhesions.

THE PRESIDENT asked if, in addition to breaking up the adhesions, it would not be necessary to perform hysterorrhaphy (*i. e.*, attach the fundus uteri to the abdominal wall), else the ovaries and tubes would simply become adherent again.

DR. POLK failed to see why adhesions were not the cause of the symptoms in many cases; in fact, why they did not constitute the chief morbid factor in many. These adhesions had the power of contracting around tubes and about ovaries even as they did about the intestines or about other mucous tubes where they had the power of creating disease by impeding the function of the tube involved. He was satisfied that every day, under the name "cellulitis," catarrhal salpingitis was cured by routine means. A catarrh could easily be prolonged by the interference that adhesions could offer. Why, then, should we deny the tubes the chance of cure that lay in freeing them from adhesions, cleansing them, and opening up the fimbriated ends. He thought that the time had come for us to aim at something better than the mere extirpation of these organs, and he hoped for just as brilliant results from the employment of the plan suggested as had been obtained by other means.

THE PRESIDENT asked Dr. Polk if he wished to be placed on

record as believing that a catarrhal salpingitis, where the tube was the size of a finger, could be cured by simply breaking up the adhesions and washing out the tube?

On DR. POLK stating that such was his exact position, the President trusted that the results obtained in this direction would be reported, for the question was certainly one of the greatest possible importance.

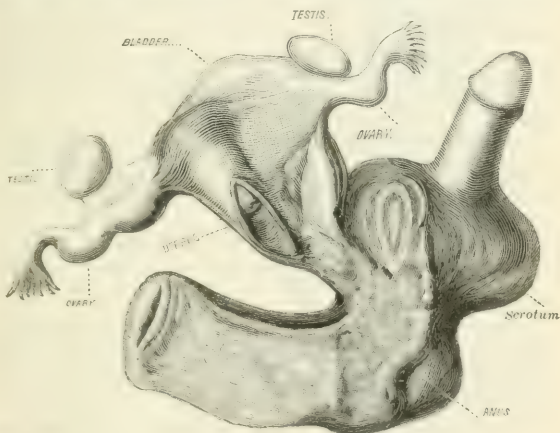
DR. NICOLL expressed the hope that the Society would not place itself on record as sanctioning the opening of the abdominal cavity when there was a mere suspicion of disease of the tubes.

THE PRESIDENT said that he felt justified in the statement that such was not the standpoint from which the Fellows judged this question.

In closing the discussion, DR. POLK reiterated his belief that the time had come when we should in certain cases take the risk of merely breaking up adhesions, washing, and dropping the organs.

TRUE HERMAPHRODITISM.

DR. FOWLER showed a wax cast of the pelvic organs of a true hermaphrodite. On the cast was the following inscription: "Æt. 27. Died from congestion of the brain during menstruation.



Was subject to monthly periodic fits of an epileptic character, hysteria, pains like those of dysmenorrhea. The vagina and male urethra contained a colored fluid like menstrual blood. Was remarkably fine-looking and robust, more rotund in limb than is usual in male subjects. The bust and chest was that of a male; the pelvis broad; very light beard; no hair on breasts, shoulders, back, or extremities. Nothing was observed in him during life of

an unusual character. His habits and mode of life were like those of other males in his position in society." The cast was made from the organs themselves, which came into the possession of Dr. Sayre, and it represented the rectum, pubis, scrotum, penis with prepuce and glans, vagina, uterus, ovaries, tubes, and the testicles. Such instances, the speaker said, were very rare. It was interesting that this individual both urinated and menstruated through the penis.

The anatomical explanation was that, in the first place, Müller's ducts ultimately form in the female the Fallopian tubes, the uterus, and vagina; in the male, the urethra.

These ducts are in the beginning connected with that portion of the allantois which subsequently becomes the urinary bladder, and at a later stage they have united to form the uterus above and vagina below. At this time both vagina and bladder, together with the rectum, open into the cloaca, and thus communicate with the outside. Later the rectum becomes separated by the growth downward of the perineal septum, and what is left of the cloaca is now called the uro-genital sinus. The uro-genital sinus, still continuous with the bladder in front and the vagina posteriorly, begins now to contract in its upper and anterior portion to form the urethra, and at the same time a septum is formed in the anterior wall lower down which incloses a canal continuous with the contraction above, thus completing the outlet to the bladder.

In this case, it is evident that the upper part only of the vagina was formed, and that the embryonic relation with the bladder persisted. Of course, it is futile to attempt an explanation of the primary cause of this malformation, as well as to account for the existence of both ovaries and testicles.

[Dr. Sayre writes the following letter concerning it:

285 FIFTH AVENUE, N. Y.,)
MARCH 16TH, 1887.)

Geo. B. Fowler, M.D.

DEAR DOCTOR:—The cast of the pelvic organs of the hermaphrodite was made for me by Mr. ———, 111 Grand street, from the *original specimen* brought to me by Dr. Avery, of Cleveland, Ohio, who had attended the patient (as a man) for many years and who made the post-mortem.

I cannot, at this moment, remember the name of the artist who made the model for me, but he lived in Grand st. near Broadway.

Yours truly,

LEWIS A. SAYRE.]

DR. SIMS recalled a case he had seen and examined some three years ago who exhibited "herself" for her living. "She" had a vagina like a child of ten, the menses were regular, the penis when erect measured fully three and one-half inches long. "She" was in the habit of copulating a female companion, but during the orgasm ejaculation occurred by the vagina.

THE PRESIDENT said that Dr. Sims' case had not been proved one of true hermaphroditism like Dr. Fowler's. Spurious hermaphroditism was not so uncommon. He had himself seen fully twenty cases.

PRENATAL DEFORMITY OF ARM AND HAND.

DR. GRANDIN exhibited the photograph and drawings of a case of deformity in a child of 13 months, which he had had the pleasure of seeing with Dr. W. J. Burnett, of Long Island City, and to whom he was indebted for the privilege of showing the specimens. The child was a female, had six teeth, and, with the exception of the deformity described, was healthy in every respect. The upper arm of the right side consisted of two humeri, each articulating with a radius and an ulna. Between these radii and ulnæ were a third radius and ulna, possibly also articulating with the lower of the two humeri, the arm being semi-pronated. There were three hands; the upper (during semi-pronation) had four fingers and one thumb, the latter always contracted, showing absence of the extensor muscle, and on its ulnar side two rudimentary fingers; the middle hand had four fingers, always contracted, the thumb lacking; the third hand had five fingers. Thus the child possessed on the right side two humeri, three ulnæ, three radii, three hands with a total of fourteen perfect fingers and two rudimentary. The hand resembled a monstrous crab more than anything else. Each hand could be moved separately. In regard to heredity, the father's aunt had two thumbs on each hand, and another relative, still on the father's side, had some peculiarity in the joints of one hand, the exact nature of which the speaker had not been able to find out. The child's brother had a rudimentary tail, so to speak, a coccyx projecting at



least one inch. The mother miscarried very recently, and Dr. Burnett had informed the speaker that the placenta had been partially previa. The aim of the woman's existence, indeed, seemed to be towards the production of abnormalities. In regard to the question of maternal impressions, absolutely no data of value had been obtained. The case was related without comment, for it was probably unique of its kind.

DR. P. F. CHAMBERS read a paper on

THE SURGICAL TREATMENT OF LARGE UTERINE FIBROIDS OCCUPYING
THE VAGINA.

"Dr. Thomas, in his work on 'Diseases of Women,' makes three varieties of uterine polypi:

- 1st. Cellular.
- 2d. Glandular.
- 3d. Fibroid.

The two former are, in the great variety of cases, early diagnosticable, and the manner of their removal is of no special interest. But with the third, or fibroid polypi, there are, however, quite a number of complications facing the diagnostician, and as many methods recommended for their treatment or removal. A fibroid polypus of the uterus is a fibroid neoplasm adherent to the uterus by a pedicle more or less narrow.

Commencing as an interstitial and then either a subperitoneal or submucous fibroid tumor, they are in their early stages classed under either head, according to the time at which the gynecologist makes his examination.

It is not my intention to treat at all of the subperitoneal variety, and but slightly of the polypi while in utero, but of the large tumors while in the vagina after their expulsion from the uterus. While in utero, they give rise to about the same train of symptoms as an ordinary submucous fibroid, that is, menorrhagia, metrorrhagia, leucorrhea, pain in back, weight and heaviness in pelvis, and, owing to the enlargement of the uterus, rectal and bladder troubles.

On examination, a tumor is discovered in the uterus, and in the great majority of cases the operator can only tell, after the tumor has been removed, whether it was polypoid or not. As to the best method of operating for the removal of the intrauterine, whether submucous or polypoid, is a question still under discussion. Many of the European surgeons are advocating laparotomy if the tumor is of any size, while the majority of American surgeons are, I believe, in favor of their removal per vaginam by the use of the *écraseur*, or piecemeal, using the scissors and spoon-saw. However, as I wish to limit my discussion to the tumor while in another stage, I will leave it, while in utero, for further consideration or for a more able pen.

Should any of us, whether we be gynecologists or general prac-

titioners, be called to a patient and, on examination, find a small fibroid polypus in the vagina, we would be very apt, after making our diagnosis, to advocate its removal; the method of its removal, whether by the *écraseur*, scissors, or galvano-cautery, is a question of little moment. If, however, instead of finding a small fibroid the size of an apple or smaller, we find the vagina filled with a hard mass the size of a child's head or larger, we are compelled at once to recognize the fact that not only our ability as a diagnostician will be put to the test, but also all of our skill as a surgeon will have to be exercised, and many times our reputations be put in the balance.

The question of diagnosis is chiefly one of differentiation between an enlarged inverted uterus and a fibroid, and in many cases it is quite a difficult matter to decide. Under almost all circumstances, it is next to an impossibility to pass the sound into the uterus. If the sound can be passed, the diagnosis is, of course, then made. But in cases where the sound cannot be used, then the reliance for diagnosis will have to depend entirely upon bimanual manipulation with one finger in the rectum and the other hand on the abdomen, and by the general appearance of the tumor or presenting body. The appearance of the tumor is, however, sometimes deceiving, for a fissure in the polypus may resemble an uterine orifice low down in the pelvis.

The question of diagnosis having been decided in favor of a fibroid polypus, then as to what should be done is easily determined upon. The tumor will have to be removed, and it is now with regard to the method to be adopted that I wish to call your attention. The method advocated by most writers is either the *écraseur* or the galvano-cautery wire, and it is those especially I wish to combat. The preliminary steps are much the same in both, and their injurious effects are about the same. In the first place, it is often next to an impossibility to pass the wire of either *écraseur* or cautery over and around the tumor to the pedicle, even where the existence of pedicle has been diagnosed and its point of attachment determined, whether from the anterior or posterior wall, whether from the cervix or body of the uterus. The time consumed in adjusting the wires is often quite long, and they very often break; in which case, if the operation has been partially performed, the result may prove serious, as the hemorrhage is liable to be severe. But the principal objection to both methods is that you are working in the dark. The wires may be cutting through the pedicle alone, or only through a part of the tumor, or, worse still, the cervix uteri may be involved in the loop, and later you may find to your horror that you have not only removed the tumor, but amputated the cervix uteri also.

Owing to the length of time consumed and probable injury inflicted by the wire, the shock to the patient is often quite severe, even before the tumor has been removed from the vagina. And

should there be any hemorrhage, it may prove very disastrous before it could be checked, for even after the tumor has been amputated it will in many cases have to be removed piecemeal.

The method which I have adopted, and in which I have more often assisted Dr. T. G. Thomas, is the following:

The patient is etherized, and placed either upon her back with her legs placed upon her chest or in the Sims position. The labia are held apart by the nurse and an assistant, and the tumor brought fully into view. It is then caught firmly by a large tenaculum or vulsellum-forceps and with a pair of large, strong, sharp-pointed scissors a wedge-shaped piece is cut out. If the hemorrhage is trivial, another piece is removed in a similar manner, and so on until the entire mass has disappeared. But should there be much hemorrhage at any time during the operation, the scissors are discarded for the while and the pointed blade of the Paquelin cautery is plunged into the body of the tumor in several directions until the entire mass has been thoroughly cooked and, as a consequence, all hemorrhage checked. The scissors are then again taken up and the operation continued. After the entire tumor, or a sufficient amount of the mass, has been removed so that the remainder can readily be delivered by slight traction through the vulva, it is then a very simple matter to cut the pedicle at its uterine attachment with either the scissors or spoon-saw.

To remove a tumor by this method is a comparatively simple matter. It takes but a short time, and is attended with little if any danger. The shock is *nil* either at the time or subsequently. The surrounding parts are not injured in the least. The hemorrhage at all times is under perfect control. And as there is a certainty of removal of the entire mass, there is no danger of absorption of sloughing material and blood-poisoning.

The subsequent treatment is very simple. As soon as the operation is finished, the surface from which the tumor has been removed is covered with iodoform, and carbolized tampon put in. At the expiration of from twenty-four to thirty-six hours, the tampon is removed, more iodoform applied, and from then on until the patient has entirely recovered, a warm carbolized vaginal douche is given twice daily.

We have never had the slightest trouble following the operation either at the time or afterwards, and in all of the cases the tumors have filled the entire pelvis."

DR. WYLIE, in opening the discussion, stated that he much preferred, in such cases, opening the capsule and enucleating the growth. In three cases of very large tumor he had done so successfully, and in two he delivered the tumor with the obstetric forceps. For the purpose of enucleation, he favored the finger or some blunt instrument. He did not approve of the spoon-saw.

DR. MURRAY said that, provided steady traction were kept up, he did not think there was much danger of hemorrhage. In two

instances of large tumor he had enucleated with the loss of very little blood.

DR. JANVRIN called attention to the fact that the original idea in the paper was the reader's advocacy of removal by the cautery, for the purpose of preventing hemorrhage. Enucleation we were all familiar with. He believed that in pedunculated tumors which were sloughing the idea of using the cautery was an excellent one. He had used it in one case where the tumor was attached to the anterior wall of the uterus and was of the size of a fetal head. The attachment was broad and the tumor sloughing. Enucleation was not practicable, and he had used the scissors and the Paquelin cautery with satisfaction.

DR. HUNTER recalled the fact that in 1879 the late Dr. Alfred C. Post had reported a case before the Pathological Society, where he had bored through a fibroid with a hot poker.

DR. CHAMBERS stated that he was a witness of this rather novel procedure, and remembered well the consecutive lesions in the vagina.

DR. WYLIE said that it was his belief that in case of sloughing fibroids asepticism was of the highest importance in order to prevent infection of the normal tissue, and he advocated giving bi-chloride douches for several hours before operation.

DR. JANVRIN thought that we could not thus reach and disinfect the interior of the tumor, and that absolute asepticism was therefore impossible.

DR. WYLIE suggested that there might be some virtue in prolonged soaking.

DR. POLK believed that for steadying and drawing down the growth a cork-screw inserted into the tumor would answer admirably.

THE PRESIDENT thought that an essential point had been overlooked by the discutants and this was the difficulty of determining the attachment of the tumor to the uterus. In cutting at random we might injure the uterus, as has happened where there existed with the tumor a partial inversion. The tumor might be delivered in one or another of many ways, but the capital point was first to make out the limit of the attachment. He advocated opening the capsule, in the first place, near the pedicle in order to find out what is tumor and what is uterus, and then with blunt instruments and finger detaching the tumor.

DR. HARRISON believed that the question of differential diagnosis was a most important one. He remembered a case which he had seen at the Woman's Hospital a number of years ago where an interstitial fibroid had partially inverted the uterus. Here, if traction had been made, total inversion would very likely have occurred. The tumor was, however, successfully enucleated.

THE PRESIDENT referred to a case where he had made the diagnosis of inversion of the uterus, and made preparations for reposi-tion. On examination under anesthesia, however, he finally succeeded in passing the sound one and a half inches, and determined that he was dealing with the partially inverted organ and a fibroid polypus. He laid renewed stress on the strict necessity of careful diagnosis.

DR. McLEAN referred to the fact that valuable time was frequently wasted in the endeavor to place the écraseur loop around these tumors. He believed in enucleation, and in the three cases

which he had seen, such had been the method he had pursued. He believed in attacking the growth directly and removing it piecemeal.

THE PRESIDENT stated it as his belief that most of these tumors could be delivered by the obstetric forceps. Hemorrhage was not to be feared if sufficient traction were kept up.

DR. POLK claimed that the wire loop should be abandoned, seeing that it was so difficult to obtain perfect asepticism.

In closing the discussion, DR. CHAMBERS said that he believed that many surgeons still used the wire loop, and he wished to call special attention to the superiority of the cautery. In many instances, hemorrhage is very profuse notwithstanding traction, and here the cautery would be found very valuable.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Thursday, February 3d, 1887.

The President, THOMAS M. DRYSDALE, M.D., in the Chair.

DR. J. M. BALDY read the following paper on

EMMET'S NEW OPERATION FOR PROLAPSE OF THE POSTERIOR VAGINAL WALL, OR SO-CALLED LACERATION OF THE PERINEUM.

Since I have become familiar with the subject, it has each day seemed more incomprehensible to me why the Emmet operation has not come into more general use. I have come to the conclusion that the fault lay in defective description of the operation as set forth in most cases and in the fondness of men for working on the skin perineum, and not in the operation per se. The operation as described by most of the writers on the subject is hopelessly mixed up with long discourses on side issues. Too much is left to be understood from diagrams alone, with insufficient attention to details in the procedure. These are prominent faults in the descriptions given by Drs. Emmet and Dudley. Dr. Dudley also obscures his paper, as presented in Pepper's "System of Medicine," by introducing several "modifications." The first of these is one of the essential steps in the operation, though somewhat obscurely described by Dr. Emmet in the third edition of his "Gynecology." It consists in carrying the denudation into the vaginal sulci. The second consists in passing deep sutures where Dr. Emmet passes superficial ones. In reality Dr. Emmet's "superficial" stitches are only relatively superficial. His description of them distinctly calls for their being passed deeply enough to include the posterior wall. My excuse, for offering a contri-

bution on such an old subject is to attempt to make the steps of this operation clear, and if I seem tedious in detail to those who are familiar with the subject, I hope you will bear with me patiently.

The belief that the female perineum or perineal body gives any support to the pelvic viscera is an erroneous one. The distance between the uterus and the perineal body is quite measurable, and the intervening tissues, which consist merely of the mucous vaginal canal and surrounding connective tissue, are by no means of such a firm character as to be able to uphold the uterus either *per se* or through the support given by the perineal body below. The only way this body could give the supposed support would be by the uterus resting directly upon it. Dr. Emmet puts it very happily when he says "it would be as rational to assume that a man's pantaloons were supported by the legs resting on the instep or foot." The principal support of the pelvic organs is their ligamentous attachments, on the same principle as the organs contained within the abdominal and thoracic cavities are suspended. A good proof of this is the fact that we constantly see women going about their daily work who have their superficial or skin perineums, not including the fascias or muscles, torn even to the sphincter ani and who never have suffered any inconvenience therefrom and who probably never will. The cause of all the various ailments following parturition, beginning procidentias, etc., will be found inside the vagina on the posterior wall. If any one will place his fingers on the posterior vaginal wall of a woman who has never borne a child, and move them first to one side and then to the other, he will find a firm resistance to pressure in any direction. If he now introduce his finger into the vagina of a woman who has had an injury to the pelvic floor during parturition, he will fail to meet with the resistance which he met in the first case. He will find instead a *rectocele* of greater or less extent with deep diverging sulci running up each side of the recto-vaginocele, into which he can easily sink his finger without finding much resistance, and yet the external or skin perineum may be perfect. To fully and clearly understand this change, it will be necessary to consider the attachments of the pelvic viscera. The pelvic fascia descends until it reaches its attachment on a line drawn from the symphysis pubis to the spine of the ischium, where it divides into two layers, the outer or obturator and the inner or recto-vesical fascia. This line of separation in great part also corresponds to the line of attachment of the levator ani and coccygeus muscles. The levator ani extends from this attachment downward, and passing under the vagina, is inserted into the rectum at different points. It is covered on its upper surface by reflexion of the recto-vesical fascia which binds it closely to the vagina and sphincter vaginae muscle and on its under surface by a reflexion of the obturator fascia which binds it closely below. The trans-

versus perinei, when it exists at all, arises from the pubic arch and its fibres are lost in the sphincter vaginae directly under the vagina. In speaking of the use of the sphincter vaginae, Dr. Goodell says that "the property of this muscle is to pull down the rigid clitoris into contact with the male organ, to squeeze out the contents of the vulvo-vaginal glands, and to compress the dorsal vein as well as the bulbs of the vagina, so as to obstruct mechanically the current of blood and produce a turgescence of these erectile organs." If this be correct, we have an explanation of the loss of sexual pleasure and desire so often seen in women who have suffered from a tear of this muscle. The recto-vesical fascia sends out reflexions from its bony attachments, also over the vagina as well as over the other pelvic contents, forming the strong ligaments which hold them in place and give firm support to the different venous plexuses; amongst others the vaginal plexus.

The advancing head of the child, under certain circumstances, crowds the soft parts in advance as it sweeps along the pelvic floor and the fascias and muscles just described becoming over-distended, separate and retract, forming deep sulci laterally. Frequently the injury is submucous. The external soft parts or skin perineum may be torn or not, very often it remains perfectly intact. There is no question in my mind that this injury is caused with unnecessary frequency, both by the injudicious use of the forceps and by our vain efforts to "support the perineum." As a rule, our patients would be far better off if we were to throw our forceps away and keep our hands off the perineum, as far as any idea of giving it support is concerned. If we hold the head back, the vis-à-tergo must be spent somewhere, and that somewhere is the pelvic floor, which suffers accordingly. The mere rupture of the fascias and muscles would cause the woman little trouble, of themselves, but the results are far-reaching. The fascias being the chief support of the blood-vessels, we now have these large veins with no support but their own walls: consequently, we soon have a chronic engorgement with dilatation and a very sluggish return of blood from the parts. The viscera become engorged and heavy. The anterior wall which has lost its main support, the posterior wall, begins to roll down and out, forming a cysto-vaginocele; the posterior wall gradually pushes forwards and bulges from the vaginal orifice as recto-vaginocele. The fundus uteri becomes or remains enlarged and falls backward from its weight and the traction of the vaginal wall. Gradually but surely the ligamentous attachments of the uterus are stretched and the whole organ slowly descends, dragging everything with it. We eventually have all the phenomena of complete procidentia if things go on unheeded. This theory of the injury in the female pelvis in parturition is by no means new. It is substantially the same view held by Emmet and expressed by Hadra in the AMER. JOURN. OBST., April, 1884, by Wylie, in the

N. Y. Med. Rec., March, 1885, Skene, in *N. Y. Med. Journ.*, April, 1885, and by Jos. Price in a paper read before the Phila. Co. Med. Soc. last spring.

The old operations, devised on the supposition that the injury of the perineal body was the cause of all the symptoms, included far more labial tissue than had been involved in the tear and were entirely inefficient for restoring the pelvic floor. They caused an unnecessary barrier to coition and frequently left the patient with a certainty of return of all her ailments and a probability of the tear being reproduced at a subsequent labor. The only satisfactory surgical procedure suggested as a cure of the injury is that of Dr. Emmet, of New York, for "restoration of the pelvic diaphragm." The patient being placed in the dorsal position and the labia separated by assistants, insert a tenaculum or a ligature (which remains a permanent land-mark to the end of the operation) into the crest of the rectocele and draw it upward without undue traction to near the meatus, and place it in the hand of an assistant. Hook another tenaculum into the labial tissue on each side directly opposite to, or in the lower caruncle or remains of the hymen. If slight traction in diverging directions be made on all the tenacula at the same time, three triangles are formed having the crest of the rectocele for their common apex. The base of the first is a line drawn from caruncle to caruncle, and the bases of the others a line drawn from each caruncle to a point far up the sulcus of the same side. On denuding these surfaces and bringing the three tenacula together, "the vaginal canal will be found reduced in size, the perineum will have been apparently drawn up towards the arch of the pubis, and the tissues of the previously gaping outlet will have been rolled in until the vaginal entrance is no longer larger than that of any female who has not given birth to a child at full term." The posterior wall is brought firmly up against the anterior wall and bladder, giving them their natural and necessary support, and preventing their rolling down and out. Care must be taken not to denude too much surface in the sulci, as failure may result, the sutures cutting out from undue traction. The scissors should be used for all plastic work in the vagina. Any one becoming accustomed to their use will never go back to the knife. The bleeding is infinitely less, and much time is saved by the celerity with which they can be handled.

The most essential part of the operation is the introduction of the sutures. They are passed from the apex of each sulcus toward the operator. A tenaculum is hooked into the apex of one of the sulci and drawn away toward the cervix uteri, thus preserving the line on which the sutures are to be introduced. The sutures are then all passed toward the operator to the bottom and median line of the sulcus, plenty of tissue being included. The sutures emerge at the median line of the sulcus and are introduced in the

same spots and carried away from the operator, emerging just beyond the freshened edge of the rectocele directly opposite the original point of introduction on the other side of the sulcus, thus taking a V-shaped course. The number of sutures is usually four or more. The other side is sutured in the same manner. When these sutures are all drawn up into place and cleared, there remains a small triangular space of freshened surface in front of the rectocele, which is closed by the so-called crown stitch and one or two superficial external stitches. The crown stitch is introduced through labial tissue at the lower caruncle, the original point of introduction of one of the tenacula, carried across through the crest of the rectocele, and then through labial tissue at the lower caruncle on the opposite side. All the other sutures are now lost to view within the vagina. The resulting shallow line directly in the median line of the perineum is closed by one or more superficial external stitches. They are passed deep enough to include a portion of the posterior vaginal wall.

The day for plunging a great perineal needle through gluteal tissues, skin, muscles, fascias, nerves, and blood-vessels, is past. It is as much a relic of barbarism as searing the stump of an amputation to stop hemorrhage, and causes much pain and suffering. The material of the suture is immaterial. Catgut can be either shotted or tied. As moisture causes the gut to swell, it should be shotted as soon as passed and fastened to the pubic hair with a pair of hemostatic forceps. This will keep them out of the way of the operator. Dr. Emmet always uses silver wire twisted and then shotted so as to be easily found; the end is bent over and lies flat on the tissues. Silk-wormgut should always be shotted. It makes an excellent suture, and forms a good splint to the tissues. Whatever is used, the stitches are equally hard to find and remove. A very easy method for either wire or gut is the use of "Aveling's wire coil." These can be made by wrapping a piece of silver several turns around a straight needle or other small staff, to form a close coil about half an inch in length. This coil is slipped over the two ends of the suture and secured in its proper place by a compressed shot. In removing, snip off the shot, remove the coil, and the suture has ends as long as the coil was. The after-treatment is very simple. If the patient would stay quietly in bed, she would recover with perfect union without the doctor's attention. As a rule, the patient complains of no pain, and opium and alcohol are not needed. The bowels are kept soluble from the first, and the urine is passed every four or five hours, the patient getting on her hands and knees, if necessary. There is no necessity for binding the knees together, nor for keeping the woman in one position for days. The stitches may be taken out on the eighth day.

DR. M. PRICE described a plan for the temporary securing of sutures at the moment of insertion. The ends being left long, two

perforated shot are slipped on, the first one is to be the permanent fastening and is left loose, the second is compressed to secure the suture ends together and to prevent the other from slipping off until the time for final closing, when the first is pushed down and compressed.

DR. JOSEPH PRICE described several ways of securing sutures so as to avoid imbedding the free ends of silver ones, and to secure easy contraction. Over the silver pass the Aveling coil and shot; this will greatly facilitate its removal. He also made some critical remarks on different methods of operating for perineal restoration. The inside method of Emmet gives the best results. The use of well-prepared catgut for the sulci sutures materially facilitates the operation. Set the sutures fresh from the alcohol, and drop a shot over before they swell.

DR. CHAS. MEIGS WILSON stated that the difficulty of representing the operation diagrammatically is owing to the fact that the plane of the posterior wall of the vagina is altered by the traction upon the tenaculum holding the crest of the rectocele. The needle figured upon the blackboard by Dr. Packard was not a Baker-Brown needle, as stated by Dr. Packard, but a modified staphylorrhaphy needle; the needle arm being longer, thinner, and having a greater arc of curvature than the ordinary staphylorrhaphy needle. It was first devised by Dr. E. Wilson, to use in uniting the freshened surfaces in Emmet's operation upon the cervix. The objection to its use in colporrhaphy operations is that, owing to the shortness of the needle arm, the shoulder of the needle, *i. e.*, the junction of the needle arm with the handle, made such a large opening in the mucous membrane of the vagina that the stitch was liable to tear out, especially if there was much tension before union had taken place.

DR. LONGAKER spoke of the advisability of the primary operation. He believes all forceps with long blades and large heels will do damage to the vaginal outlet. He has seen transverse tears of the outlet after natural as well as instrumental labor. It has been remarked that perineal rupture may exist without causing any symptoms, but this is no reason why tears in general should not be repaired. He believes in performing the primary operation in every case. He likes the Chinese silk for sutures. He has examined a perineum immediately after labor and found it apparently intact, and a month later found a rectocele and cystocele, indicating a submucous tear.

DR. JOSEPH PRICE, upon request of the President, remarked that he had seen Mr. Tait operate for a complete tear into the rectum, also for partial laceration and rectocele. He operates so rapidly that it is difficult to follow him. He makes two scissors cuts, one on each side of the laceration, splitting the tissues from the centre line laterally and forward. He removes no tissue, but throws one flap inside and the other out, and closes by interrupted buried sutures of silk-wormgut. In the complete rent he splits the septum laterally, turning one flap into the bowels, the other into the vagina, and closes by interrupted transverse buried sutures, with two or more external sutures.

DR. H. A. KELLY stated that this operation was not original with Mr. Tait. It had been originally devised by A. R. Simpson, of Edinburgh, and a description, with illustration, is to be found in Hart and Barbour's manual.

DR. BALDY, in closing the discussion, stated that the needle

used by Dr. Emmet was round, slightly curved at the point, and from three-fourths to one inch in length. He uses it with a needle-holder, and, as a rule, prefers to have it threaded with a silk loop into which the wire sutures are hooked. Dr. Baldy has now in his care a patient whose fourchette is perfect, but scar-tissue can be felt inside of the perineum, and there is some little prolapse of the posterior wall. When she was delivered some weeks ago, the need of an operation became apparent, as at that time the anterior wall and bladder prolapsed before the head in a mass as large as a base-ball. He does not sympathize with the total condemnation of the forceps. They are needed sometimes, though frequently abused; neither does he approve of the so-called support of the perineum either by towel or hand, nor the idea of holding the head back, because these methods deflect the force of the uterine contractions against the posterior vaginal wall and the pelvic floor. He has seen cases which had been operated on by the old method by eminent gynecologists in which the result was a perfect external perineum, but in which the pelvic floor was as badly off as it had been before the operation. The floor was completely restored by the Emmet method subsequently.

DR. JOS. PRICE read an extract from a private letter from Dr. Emmet to himself: "I am very glad that the woman who was operated on has fallen into your hands so that you may be able to make a report of the exact condition after labor. I have not kept any accurate account, but I think I have heard of some twenty cases who have gone through labor without accident after the operation at the vaginal outlet had been done. On the other hand, I have not heard of a single case where the parts were torn after the operation, which is of more value, for I should be more likely to hear promptly of the failure than of the success."

PLACENTA PREVIA.

DR. JAS. V. KELLY reported the following case: K. W., fifth pregnancy; had a vaginal hemorrhage Dec. 28th, 1886. The bleeding was quite profuse, but ceased spontaneously. On examination, the os admitted with ease the index finger which came directly in contact with the placenta. The patient was supposed to be nearing the completion of the eighth month of pregnancy. She was enjoined to rest in bed, and dilute sulphuric acid was administered. Several days later the hemorrhage recurred, and again ceased spontaneously. She kept on dribbling a little each day until January 11th, 1887, when she had a violent hemorrhage, and I determined on active interference. Her pulse was 120; she was very pale and had attacks of fainting. The os was dilated to the size of a half-dollar, and dilatable. I gave her fifteen drops of Squibb's fluid ext. ergot. There was no decided pain, though the patient said she felt some slight bearing down. I brought her to the edge of the bed, with her knees flexed, and found a decided thinning of the placenta toward the right sacro-iliac synchondrosis. It was difficult to rupture the membranes without detaching the placenta, so I made firm pressure over the fundus, which caused the head to descend, and I then ruptured the membranes against

the vertex. The waters drained off, the uterus condensed, and the bleeding ceased. I then gave twenty drops more of the ergot and slight pains were noticed shortly afterwards. I still kept my index and middle fingers in the rent I had made in the membranes and the edge of the placenta, endeavoring to prevent any bleeding by pressing the placenta against the left side of the os. The pains became stronger, and the head descended, and the bleeding again returned. I endeavored to accelerate the labor by encouraging the woman to bear down, and by making strong pressure over the fundus; but as these measures did not produce the desired result as rapidly as I wished, and the head having passed the superior strait, I applied the forceps and delivered. There was no further hemorrhage, and the placenta was expressed by Credé's method in fifteen minutes. The woman received a vaginal injection of warm vinegar, as well for its antiseptic as for its hemostatic properties.

The fetus was of fair size for the eighth month, and was nearly lifeless. Artificial respiration, mouth to mouth, revived it, and it lived thirty hours. The mother was in a very exhausted condition, and was given brandy and ammonia for nearly a week. The pulse, after delivery, was 140. She was also given plenty of milk and broth, and not allowed to raise her head off the pillow for a week. She has since entirely recovered. No tampon was used in this case. Ether was not administered.

DR. M. PRICE had recently attended four cases of placenta previa at full term; one of them, a very desperate case, had been tamponed. The cervix was dilated to the size of a half-dollar. He was urged by his consultant to introduce his hand, turn, and deliver, which was, much to his surprise, accomplished in ten minutes, with child and mother both saved. The four children were all saved, and the mothers also, although one of the latter died from anemic causes three months later. He would at once, when called to such a case at full term, or in premature ones, if he considered it advisable, dilate, turn, and deliver. The method adopted in these four cases is that now adopted by the best authorities. Tamponing at term he considers dangerous and involving a loss of valuable time, hazardous to both mother and child.

DR. LONGAKER thought it far better to turn the fetus by the bipolar method before rupturing the membranes or perforating the placenta. He had attended a lady in her first labor at the age of 37 years. She was seized with profuse hemorrhage while walking in the street. When called, he found placenta previa; the os was open to the size of the index finger, and large clots were in the lower segment of the uterus. He turned the child by the bipolar method, passed two fingers through the placenta, brought one leg through, and left the case to nature. The child was lost, as the entire placenta was attached low down; placenta previa centralis and retraction of the uterus interfered with utero-placental circulation. In a second case, turning was followed by a similar result in a case of placenta previa centralis. While the

two children were lost, both mothers recovered without an unfavorable symptom. In three cases respectively of lateral, marginal, and partial placenta previa, treated by rupture of membranes and application of forceps, in one of them, two children were lost. In one of these cases, the fetal heart-sounds were extinct on my arrival, half an hour after a sudden and profuse hemorrhage. All the mothers did well. The high fetal mortality shows that we cannot place much value upon the child's life; and, in view of the dangers which threaten the mother's life, would it not be best to interfere promptly, when called to a case of hemorrhage from this cause, regardless of the age of the fetus?

DR. M. PRICE inquired of Dr. Longaker how the feet could come through the placenta unless he first passes his hand through to make a hole. When the thighs and breech come down, they serve the purpose of an efficient tampon.

DR. LONGAKER replied that, version being first accomplished, the hand is passed into the vagina, and two fingers through the placenta can find the foot.

DR. H. A. KELLY exhibited a

PLACENTA PREVIA CENTRALIS

of these venth month of pregnancy, in which he had perforated the placenta to break the amnion, and after turning delivered, saving the mother, who had suffered from profuse hemorrhages. He described a case in which turning had proved impossible in a placenta previa lateralis, owing to the fact that the cord was so tightly wrapped around the child's neck that only a small bight was left between the head and placenta; and when the foot was brought out of the vulva, the head was felt fixed at the brim as at first. The foot was returned, and a forceps delivery of the head revealed the difficulty, which was corrected, and the mother delivered of a seven months' baby, which died immediately. The mother made a perfect recovery. No one rule suits all cases. The first point of importance in event of free hemorrhage is to rupture the membranes, and this must not be a mere puncture, but as free a separation as possible along the placental margin. The hemorrhage comes from the separation of the uterine and placental surfaces, and this is only to be prevented by freeing the placenta on one margin, so that, as the contraction ring goes up, the placenta may, as far as possible, ascend with it. Turning is only needed in the more urgent cases. Where the pains are strong and the hemorrhage has been but moderate, let the head engage and more children will be saved.

He urged more care in the classification of cases; for, when the diagnosis is made early through an os but moderately dilated and placental tissue felt everywhere, the diagnosis of a central implantation is often made, which attention to the later development of the case will show, through a fully opened os, to be partial.

The tampon also should be given up; for, unless scientifically applied, it is utterly useless; it introduces great danger of sepsis:

and, with the best applied tampon, in the absence of the necessary counter pressure above in the uterus, in the very cases in which it is used the dangers of concealed hemorrhage are imminent. If the bleeding has been great, bring on active labor, but don't use the tampon. Finally and most important, every case should be treated by thorough antiseptic measures, owing to increased septic susceptibility.

DR. PARVIN remarked that the classification of placenta previa that had been given was incomplete; it did not include all the facts, for instead of two there are four varieties of the disorder. Thus we have not only central and partial, but also marginal and lateral implantation of the placenta when this organ is previa; and it is previa whenever it occupies a portion of the womb which must be dilated to permit the passage of the child. Manifestly the results, both as to maternal and fetal mortality, will be very different in different varieties.

It is a mistake to assert that the tampon treatment of placenta previa has been abandoned. Very many eminent French obstetricians, for example, in certain cases employ the tampon, and the cases will be referred to again. That the tampon permits concealed hemorrhage is an old objection which has gained nothing by time; it is a sort of bug-bear that does not frighten obstetricians who have used the tampon, for where it is properly applied, the membranes being unruptured, bleeding either internal or external to any serious amount is impossible. Indeed, if the uterus be properly compressed through the abdominal wall and the tampon well applied, serious hemorrhage from placenta previa, even after the rupture of the membranes, is impossible. That septicemia is peculiarly liable to occur in cases where there has been placenta previa has been for some time generally recognized, this liability arising, not from the position of the placenta, but from the manipulations, the consequence of such position.

Now, in what cases of hemorrhage resulting from placenta previa is the tampon advisable? Blundell has stated that in one night he was called to two women far advanced in pregnancy, both dead from uterine hemorrhage, and then refers to some cases of such flooding where removal of the child could be more readily effected by Cesarean operation, so slightly dilated and so resistant was the os uteri. The most natural treatment of a hemorrhage occurring with an undilated os is arrest of the flow by pressure, that is, by the application of the tampon; such treatment may be available in some cases where no other can be so readily applied. We are indebted more especially to Wigand for the first clear and complete exposition of the tampon treatment in placenta previa, and his testimony as to the value of his method, first uttered probably about one hundred years ago, was very strong, for he declared that in suitable cases, and properly used, no death of mother or child occurred. Müller, whose elaborate monograph upon placenta previa is so well known to those who have studied this subject, has given a qualified, but still a positive indorsement of the tampon as a proper means to employ in certain cases and at a certain stage of the hemorrhage, that is, when the cervix is undilated. There have been cases in the hands of both Pajot and Bailly left, as was Wigand's practice, after the thorough tamponing, to nature, the further pro-

gress of the labor being undisturbed by art. Murphy has been the most successful among recent obstetricians in the treatment of placenta previa, and his method is the induction of premature labor with partial detachment of the placenta and the use of Barnes' dilators; but it is to be observed that the dilators act as tampons by their pressure arresting the flow of blood. Certainly the remarkable success which has attended Murphy's method in his own hands, especially the low maternal mortality which he has secured, speaks strongly in favor of the general adoption of that method. In reporting cases of placenta previa, it seems to me very important, in order that we may compare similars, to know the variety of the disorder in such instances. The practitioner who, for example, successfully for both mother and child conducts a case of lateral implantation of the placenta has accomplished no wonderful achievement. We cannot arrive at certain knowledge without the materials for induction are properly classified. One word more. Some scepticism has been expressed as to the possibility, or rather practicability, of combined internal and external version in cases of placenta previa; but as this has been accomplished, it is hardly a question for discussion.

DR. PRICE's cases were at full term. He had not taken premature cases into his account. Deliveries at five, six, and seven months, the fetus not being viable, admit different principles. Emptying the uterus as early as possible is safer for the mother.

PELVIC MEASUREMENT.

DR. H. A. KELLY called the attention of the Society to an external direct method of measuring the conjugata vera, which he had found of extreme value in a large number of non-pregnant gynecological cases which had come to him complaining of difficulties since a previous confinement.

The short vagina, or cellulitis, or cicatricial contractions often prevent the finger in the vagina from reaching the promontory. In a case he had examined in the morning, the short vagina prevented the vaginal finger reaching the promontory while the outside hand rested upon it, and on pressing deeper felt the vaginal fingers fully three centimetres below. This case was measured by the outside hand, and determined normal. Another case had a rachitic pelvis eight and one-half centimeters conjugate. She had borne ten children at term through difficult labors, but without assistance.

The method is simple, avoids a vaginal examination in the virgin, is invaluable in many cases retrospectively and prognostically. The inaccuracy of the external conjugate is well known. This, of course, is of no use in the most important class of cases—the advanced pregnant—but it does often afford invaluable facts in other cases.

The method is to press deeply with the finger tips of the extended hand until the promontory of the sacrum is felt, then by slipping the fingers up and down over this until the relations are well appreciated, let the fingers rest vertically above the angle and at the same time mark on the palm with the finger of the

other hand the position of the posterior surface of the symphysis also vertically below. This measurement from the mark thus made to the tip of the finger is the *conjugata vera* thus directly measured.

DR. MONTGOMERY, in a paper entitled

TRACHEOTOMY AND INTUBATION IN DIPHTHERIA.

urged the importance of early operation. The symptom which should indicate the necessity for operation was depression of the substernal region during inspiration. This symptom indicates the inefficient entrance of air to fill the lungs, and the diaphragm becomes a fixed point depressing the soft tissues. The longer this condition continues the greater the danger of collapse of portions of lung tissue. The large mortality after tracheotomy and intubation is due to the postponement of operative interference in the majority of cases until these changes have occurred. This assertion is verified by his own experience in tracheotomy. In his first ten cases, in all but one of which the operation was done as a last resort, none recovered. In the next seven cases in which, excepting two, it was done early, five recovered. The two fatal cases were not considered hopeful at the time of operation. His eighteenth case died before the trachea was opened. Of the last ten, five recovered. Twenty-eight cases with ten recoveries. He has practised intubation in thirteen cases with six recoveries. All but one of these cases were seen in consultation, and some of them were in a dying condition when intubation was practised. In no case did death occur in less than twenty-four hours, and in all the relief from the dyspnea was prompt and permanent. The youngest child was eighteen months of age, and died on the fifth day of convulsions. The youngest child to recover was *æt.* two years. In one case of recovery, tracheotomy was performed the day following the intubation. A small-size tube then suited for its age had been used; the dyspnea recurring and the tube absent from the glottis, it was feared that it had been passed into the trachea. It was found that the tube was coughed up and swallowed, and passed per anum two days later. Of course, in this case little can be claimed for intubation. He prefers intubation to tracheotomy, and believes that the former will supplant the necessity of doing the latter. The advantages are: It is free from danger, it requires no cutting nor anesthetic. The after-treatment does not require skilled attention, as the air is moistened and warmed by the natural passages before entering the trachea; there is, therefore, no dry mucus accumulating in the tube, and not the same danger of secondary inflammatory lesions. As the tube does not fill up the calibre of the trachea, membrane is coughed up around instead of through it, and thus the danger of blocking is avoided.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, January 12th, 1887.

J. B. POTTER, M.D., *President, in the Chair.*

Specimen.—DR. ARMAND ROUTH showed a uterus with what appeared to be a fibro-myoma attached to the left cornu of an “uterus bifundalis.” Early in 1885 there was a history of extra-uterine fetation. Drs. W. Griffith and W. Doran remarked on the case, and the specimen was referred to a committee for report.

MIDWIFERY AMONG THE BURMESE.

DR. T. F. PEDLEY, of Rangoon, read a paper which described the occupation, dress, and physique of Burmese women. The knowledge of the native doctors is handed down by tradition, and takes origin from fable, horology, astrology, etc., and dieting is followed according to a certain letter, date, name, good or evil spirit. The midwives are of the poorest and lowest class, their chief qualification being age and being the mothers of large families. The more decrepit, the more they are respected. All new methods are resisted. Nature is kind, as a rule, to the mother, and carries her safely through. In lower Burmah there is little real poverty, and the women lay by for the event from five to fifty rupees.

A large store of fire wood is laid in. If she cannot buy it, she collects it before her delivery. A room is set apart where the mother remains until convalescent. Regardless of all sanitary laws, every effort is made to keep out air, and especially the smell of cooking, which is supposed to be practically injurious. A fire is made of wood, no chimney being provided, and the smoke renders the air stifling. The patient, when in labor, is surrounded by female friends, and a crowd of men and women squat behind the curtain which divides the apartment and smoke or chew betel.

When the pains become severe, the patient squats on the floor, supported by a woman sitting behind her. The midwife assists in front by pushing with her hands on the abdomen, using more and more violence as the pains increase. A silk scarf or cloth is tied tightly round the body above the umbilicus, which is drawn tighter as the case proceeds, not with any idea of restraining hemorrhage or supporting the uterus, but to prevent its rising into the chest. As the head progresses, the woman is laid on her back on the floor, with her knees drawn up.

Her attendants press on the abdomen with all their might. When the head of the child presses on the perineum, the midwife leaves the pushing to others, and, in all first cases, tears the peri-

neum either with her thumb nail, which is grown sharp and long for the purpose, or with her great toe nail. In other cases, the perineum is retracted, and as soon as the head is born, the child is rapidly extracted. If the placenta does not follow quickly, the cord is dragged on, and this failing, it is removed by the hand or torn away piece by piece.

The mother is washed, and the whole body rubbed with turmeric, and saffron is plastered over the vulva. The fire is kept up, and hot bricks wrapped in rags, or bags of hot sand are placed on the abdomen, and twice a day the patient has to squat over smouldering embers upon which tumeric has been thrown, or over steam arising from hot bricks. The skin is often blistered by the application of heat, but heat is supposed to permeate the parts and heal them.

The food is hot water, hot broth, with fish and rice. The poor get up on the fourth or fifth day, but the better classes scarcely move for a fortnight, except for the daily steaming process and the calls of nature. On the seventh day, a hot "pack" is used for some hours which produces free perspiration. When the blankets are removed, the patient is bathed freely in cold water. The constant sweating during the first week brings out a miliary rash, which is considered a good sign. Shampooing or massage is used for hours together, often so excessive over the abdomen that displacements of the uterus are produced. Though Burman women are clean in health, washing is avoided during sickness, and their habits are dirty.

When delivery is not rapid, various barbarous methods are followed, such as standing on the patient's abdomen and pressing or kneading it with the feet, or a bamboo or plank is placed across the abdomen, while the attendants endeavor to expel the child by using all their force at the two ends.

This method is very usually fatal to mother and child and often causes rupture of the liver or bladder. Cases of tetanus often follow lacerations of the perineum, cervix, or rectum. One case of recovery was recorded under the use of chloral. In cross births, the part presented is torn or cut off and the child removed piece by piece, the head being extracted by means of a large fish hook. In all cases the object is to remove the child as quickly as possible and regardless of risk to the mother, owing to the superstition that if a woman dies undelivered the spirit of the mother and child haunt and bring misfortune to the relatives ever after.

Burman women really need little assistance if nature is left to herself. Their pelves are roomy and expulsive efforts strong. The native system leaves little for perverted ingenuity to devise towards preventing recovery and is about the most severe and fatal in the world. The only remedy is a supply of properly trained Burmese midwives which the Burman branch of the "Countess of Dufferin's fund" has determined to undertake.

The paper was illustrated with colored drawings by native artists of the most characteristic points mentioned.

DR. BOXALL mentioned many points of similarity between the Burmese and Chinese as regards sophistry and superstition in the practice of all the branches of medicine, and the description of the practice of Dr. Hua during the Han dynasty, about a thousand years ago, taken from the "Story of the three States," puts modern abdominal surgery into the shade.

MR. DORAN asked Dr. Boxall if he knew whether women in the East suffered from disorders incidental to menstruation and pregnancy in consequence of the habit of tobacco smoking to which it is said that they are addicted from an early age.

DR. BOXALL was not aware of any.

DR. W. GRIFFITH thought the paper of great interest as a record of most barbarous midwifery in the nineteenth century which would be still more interesting at some future time. There was a field open for gentlemen who had the opportunity of studying midwifery amongst various races to investigate the modifications of the process due to different conditions present which are peculiar and normal to these races. Sir W. Turner and others are investigating their crania and pelves and have shown such differences in them as to indicate the probability that the mechanism of labor, including the position of the head at the brim, must be altered accordingly.

ON STRICTURE OF THE FEMALE URETHRA.

By DR. HERMAN.—The author had measured the female urethra in fifty-five cases in which no urinary trouble was complained of. He found that in the majority No. 17 catheter would pass, and in all but two No. 14. He related six cases of stricture of the female urethra under his own care. He had collected and arranged in tabular form twenty-three others which were all that he had been able to find reported. He drew a parallel between the two sexes, as to the etiology of the urethral stricture and showed that, while it was much commoner in males, its causes were much the same in the two sexes. In both it might be the result of injury (these cases being proportionately commoner in females on account of child-bearing) or of the cicatrization of chancre. In the female it was sometimes due to growths of so-called lupus of the vulva. In both sexes, the chief cause, in young and middle-aged subjects, was gonorrhea. In the aged of the male sex, enlargement of the prostate was the common form of stricture. In old women, there was found stricture due to general fibrous thickening and induration of the urethra, occurring without any history of gonorrhea or other discoverable local cause. The author suggested that, as in women the homologue of the prostate gland was the urethrovaginal cellular tissue, these cases were possibly analogous to enlarged prostate in the male. As to treatment, he found that rapid dilatation was so simple and successful that it was preferable to any other method.

DR. HORROCKS related two cases under his own care, both of

which he considered were congenital. He approved of the treatment by dilatation.

DR. AUST. LAWRENCE (Clifton) considered stricture of the female urethra rare. He had only met with two cases in the last fifteen years. One was in an old woman and appeared to be due to cicatricial bands, the other was in a young woman, probably the result of specific urethritis. Both were cured by dilatation.

DR. ARMAND ROUTH mentioned a case of inflammatory urethritis which appeared to have commenced with anterior parametritis and spread downwards along the cellular tissues of the vagina, a double urethral stricture eventually resulting.

DR. W. GRIFFITH had that day seen a case at the Samaritan Hospital in a married multipara aged 30. She had probably suffered from gonorrhea. The stricture was one and one-fourth inch from the meatus and only just admitted a uterine probe. It was dilated in a few minutes with bougies to No. 13.

Annual Meeting, Wednesday, Feb. 2d, 1887.

J. B. POTTER, M.D., F.R.C.P., *President, in the Chair.*

A CASE OF UNILATERAL GALACTORRHEA.

DR. GIBBONS described this case:

A lady, aged 23, who had ceased nursing for six weeks, complained of constant running of milk from the left breast. After her first confinement, she had nursed for five months with both breasts, after which she had to give up on account of weakness, and an abscess formed in each breast and discharged for eleven months. After this, her second confinement, she at first nursed with both breasts, but the milk disappeared from the right one, and she continued with the left one only for four months, and then discontinued, as it was thought that her milk disagreed with the child. Menstruation had not reappeared, there was no reason to suspect pregnancy, and there was no uterine disease. Although she was anemic, the milk was of good character, and the amount that flowed was twenty ounces in twenty-four hours.

The writer then enumerated the various remedies which he had used to arrest the secretion of milk, without result.

These included arsenic, iron, strychnine, iodide of potassium, belladonna, bromide of potassium, quinine in large doses, compression of the nipple, opium, galvanism, faradism, rest, and a dry diet. Menstruation appeared eleven months after the birth of the child, being preceded by a gradual diminution of the flow of milk, which continued over the second period and then ceased altogether, and the patient's condition became one of natural health.

The author drew attention to the following facts:—1, that the galactorrhea was unilateral; 2, that the milk was of normal quality and quantity; 3, that there was no stimulus of nursing or of the genital organs; 4, while resisting all treatment, it ceased spontaneously on the occurrence of menstruation. Authors were quoted as to the value of certain drugs in galactorrhea, and

cases were given illustrative of treatment by galvanism and faradism.

Reference was made to the experiments of Roehrig to determine whether the nervous or vascular element has the greater influence over the secretion of milk, and resulting in favor of blood pressure as the chief factor.

Sinétý was also quoted, and in conclusion the writer remarked that he had failed to find any case similar to the one brought forward.

It was proposed and seconded that the discussion of this paper should be postponed till the next meeting of the Society.

THE PRESIDENT delivered the

ANNUAL ADDRESS.

Dr. Potter first congratulated the Society on its prosperous condition. The number of Fellows at the close of last year was 736, and although 40 Fellows have been lost to the Society by death or erasure, at the present time they numbered 761, which is the largest number since its foundation. Financially, the same prosperity could be reported, and the library has had an increase of 156 volumes.

The Midwifery Board has become so popular that in the past year 102 women have come up for examination, 80 of whom were found qualified to receive the Society's diploma, and 390 midwives are now on the register. If the Society had no other work to show, it might well be proud of having taken in hand this duty, so long neglected by the state.

A great many interesting specimens have been shown, and 20 important papers have been read at the meetings.

These were reviewed by the President, who then reminded the Fellows that, if there were no striking novelties in treatment to record, the function of the Society was to maintain a judicial attitude, and, while assisting real progress, to check or arrest it when it tends to danger. One of the highest points that we should aim at is the prevention of disease, and while the improved records of our lying-in hospitals showed advance in obstetrics, this has not received the same attention in diseases of women. The more frequent induction of premature labor and timely use of the forceps have reduced mortality greatly; but, in our present state of knowledge, we are not prepared to accept abdominal section as an alternative to craniotomy in all cases, still holding to the English axiom, "the safety of the mother before that of the child." In chloroform and frequent use of the forceps, we have means of preventing lacerations and sloughing of soft parts, thus rendering far less common the miserable after-effects of lingering labor.

The prevention of diseases of women has not received the same attention. The effects of cold, damp, imprudence, and want of care at the menstrual periods, the effects of excessive child-bear-

ing, abortions, the prevention of impregnation, and many other causes of disease, deserve and require careful consideration, and he who can prevent the occurrence of diseases of women will be a greater benefactor to his race than the operator, however skilled he may be, who treats them.

The tendency now seems to grow more and more surgical, until to some minds abdominal section and the removal of internal organs seems the panacea for all the evils that woman is heir to. To the indiscriminate use of these procedures we cannot give our sanction, and especially do we object to the heroic surgical treatment of hysteria, that chameleon disease which still claims so much sympathy and treatment at our hands. Even statistics on these matters, however carefully tabulated, have to be received with caution, the distinction between cases that have recovered or become well and those that can be truly said to have only just escaped death, or have lived, too frequently with their suffering unrelieved, has not always been clearly shown.

In estimating these matters, much must depend on character. A reputation for truth and logical precision is of more permanent value here than the statement of brilliant results that will not bear the test of investigation.

If I have spoken strongly on this matter, it is owing to the fear that some may be apt to forget the sacredness of human life in their zeal for operating, and this must be my excuse.

The President next gave a short biographical record of the Fellows of the Society who had died during the past year. He then, before quitting the presidential chair, expressed his sense of the consideration and courtesy which he had always received during his term of office, and congratulated the Society on the selection of his successor.

ABSTRACTS.

1. **A. Martin: The Manual Delivery of the After-Coming Head in Cases of Pelvic Deformity** (Reprint from *Berlin Klin. Woch.*, No. 40, 1886).—In this monograph he aims to prove the superiority of the Smellie-Veit extraction of the after-coming head over the forceps. This instrument he has had occasion to use only once in the course of an extensive practice. He herein tabulates 38 cases where he resorted to manual delivery in case of pelvic deformity. These 38 cases concern 32 mothers, and in 18 the diagonal conjugate measured between 9 and 10 cm., in 11 between 10 and 11 cm., in 3 between 11 and 12. The following were the results in previous labors: 40 were spontaneous, 23 required the forceps, 9 version, 3 extraction, 3 perforation, 2 induced labor. Of the 38 labors conducted by M., 31 children were born alive (in 10 with pressure markings), 7 delivered dead, 6 of whom had succumbed before manual

delivery of the head was resorted to. In none of the living children was there any evidence that the method of delivery had been injurious, and the same remark holds true of the mothers.

(These statistical data certainly speak in favor of the Smellie-Veit extraction method and are valuable in settling that vexed and constantly recurring question as to the advisability of applying the forceps to the after-coming head.)

E. H. G.

2. Schultze: The Resuscitation of still-born Children by "Schultze's Method" (Reprint).—This pamphlet constitutes a further plea in favor of this valuable method of restoring life to fetuses in a state of apparent death. S. answers the objections to the method which have emanated in particular from Hofmann (Vienna), and Schauta (Innsbruck), further reiterates his belief in its efficacy, and proves that by it the indications are better fulfilled than by any other method in vogue.

E. H. G.

3. Vedeler: Retroflexio Uteri (*Arch. f. Gyn.*, XXVIII., 2).—The writer draws the following conclusions in regard to the etiology, frequency, and symptomatology of this distortion of the uterus: 1. It may be congenital, it may be acquired at puberty, or follow on labor; 2. In 40% there are no symptoms—in 64% of maidens, 30% nulliparæ, 38% paræ; 3. In 60% accompanied by symptoms—maidens 36%, nulliparæ 47%, paræ 62%; 4. Every degree of retroflexion may exist with or without symptoms; 5. It may occur suddenly without symptoms, it may remain and the symptoms disappear, the same symptoms which accompany it may be met with where the uterus occupies the so-called normal position; 6. It follows, therefore, that retroflexio is of interest from an anatomical and physiological standpoint, but is of no importance from an anatomical pathological standpoint.

E. H. G.

ITEM.

DR. AUGUST MARTIN, of Berlin, who is so well known as to need no introduction, has consented to become a collaborator of this JOURNAL, in place of the late Prof. Schroeder.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] MAY, 1887. [No. 5.

ORIGINAL COMMUNICATIONS.

REMOVAL OF SOLID UTERINE AND OVARIAN TUMORS BY
LAPAROTOMY, WITH A REPORT OF NINE CASES.¹

BY

MATTHEW D. MANN, A.M., M.D.,

Professor of Obstetrics and Gynecology in the Medical Department of the University of
Buffalo.

THE operation for the removal of ovarian cysts is now so well settled, not only as to the propriety of its performance, but also as regards the details and steps of the procedure, that little new remains to be said. It is hardly possible that the future will bring much improvement on what has already been done.

But in regard to the removal of solid tumors by abdominal section we have still much to learn, especially if the growths are connected with the uterus and it becomes necessary to remove a portion of that organ with them. Not only are the proper indications for such operations still unformulated, but their technique is as yet unsettled, and the very propriety of their performance at all is even held in doubt.

It is as a small contribution to aid in the settlement of some of these vexed questions that the histories of nine cases are presented. That such operations are sometimes difficult, that they may tax to the utmost the ingenuity and skill of the sur-

¹ Read before the New York County Medical Society March 28th, 1887.

geon, these cases would seem to show. It is hoped that their relation will aid others in overcoming similar difficulties, and will assist in the achieving of the same fortunate results as were here obtained.

These cases are not selected, but constitute the writer's whole operative experience¹ in the treatment of solid tumors by abdominal section.

Of the nine cases, three were solid tumors of the ovary, four pedunculated subserous fibroids of the uterus, and two fibroid enlargements of that organ involving the whole body in such a way as to necessitate its removal. The body of the womb was also removed in one other case.

CASE I. (No. 9)²—*Double ovarian tumor; removal of corpus uteri and tumors; pedicle dropped; recovery.*³

Mrs. S., aged 49. First came under my notice in October, 1882. She gave the history of old pelvic inflammation with abscess, and was greatly reduced by long-continued suffering and loss of sleep. Her temperature was generally elevated two or three degrees and there was nausea and vomiting. The abdomen contained a large solid mass which filled the cavity of the pelvis and reached to the umbilicus. A little to the right of the median line there was a groove dividing the tumor into two. The uterus was solidly fixed in a mass of old pelvic adhesions, and within the cervix was a small fibroid polypus. Under ether, the polypus was twisted off and a careful examination of the abdomen made. The tumors were then distinctly separable, firm, but somewhat elastic, and I thought I could detect deep-seated fluctuation. The tumors seemed to be firmly adherent in the pelvis. The diagnosis was uncertain, and in order to aid in arriving at a correct opinion I thrust in an aspirator needle, and at a depth of three inches obtained half a drachm of a thick, yellowish fluid, slightly stained with blood. Under the microscope, this fluid showed a multitude of what seemed to be Drysdale's ovarian corpuscles. Wishing a corroborative opinion, I sent the specimen to Dr. Drysdale, who kindly answered, "I have examined the specimen sent me and think it is from an ovarian tumor." I operated November 7th, 1882, assisted by Drs. Mynter, Crawford, and others. I found the tumors closely attached to the uterus and at the pelvic brim to be held by thick, broad bands, which bound them firmly everywhere to the pelvis. In the left tumor there were several small cysts, but their evacuation did not materially reduce the size of the tumors. After making a large abdominal incision, and working for a considerable time, I

¹ Exception might be made to oophorectomy for bleeding fibroids. (See AM. JOURN. OBSTET., vol. xiii., 1880.)

² Numbers refer to places in my series of abdominal sections.

³ See New York Med. Journ., July 7th, 1883.

detached the right tumor and removed it. There was no pedicle, but many adhesions were tied. The left tumor was more firmly adherent, and after loosening it with great difficulty from the pelvis and dividing the adhesions, a broad, thick, short pedicle presented itself. This was divided by the thermo-cautery without ligature and proved to be the cervix uteri surrounded by adhesions. No hemorrhage followed. The cavity of the abdomen was cleansed and the wound closed. No drainage-tube was used. The operation was long and severe, and the amount of shock exceptionally great. She made a slow recovery, retarded by an abscess in the abdominal walls and a swelling of the parotid gland. A careful examination of the specimen will show that with the left tumor I removed the whole of the corpus uteri. The tumors evidently grew between the folds of the broad ligaments and this was the cause of the firm adhesions. It is worthy of notice that the stump of the cervix divided by the cautery did not bleed at all. The uterine and ovarian arteries must have been tied with some of the bands of adhesion. The tumor seems to be an ordinary adeno-cystoma with excess of adenoid formation.

I have never seen such firm solid adhesions as existed in this case. The amount of tearing and enucleating which was done, the large amount of torn and oozing surface which was left made it seem as if recovery would be impossible, and yet the progress of the case was only slightly interrupted. Unfortunately, within a year cancer developed in the remains of the cervix and soon proved fatal. It is hardly necessary to refer to the assistance rendered by the microscope in the diagnosis of this case. This matter is now pretty well understood and its value in doubtful cases fully appreciated, though it cannot be considered infallible. Undoubtedly, the more experience a man has the more will he rely on purely clinical data and the less will he resort to the always somewhat hazardous tapping to help him in his diagnosis. Early in my career as an ovariologist I tapped often, for the last three years not at all. This is due, doubtless, to increased self-confidence both in diagnostic skill and operative ability.

CASE II. (No. 38)—*Fibroma of the left ovary; ascites; removal; pedicle dropped; recovery.*

Mrs. H., aged 54. Mother of ten children. Menstruation ceased at 50. She first noticed a "lump" in the abdomen about three years before coming to me. It grew slowly up to two months before I saw her, when the abdomen began to enlarge very rapidly and she discovered that there was "water in the belly." She was quite emaciated though in fair health, but was greatly troubled by retention of urine and pain in the bladder. Had

never been tapped. The abdomen measured thirty-four inches at the largest point, was flat, soft, and gave distinct evidences of free fluid. Floating in the fluid was a hard, irregular, rounded body which had the feel of a fibroid tumor. The uterus was very low in the pelvis, not enlarged, and evidently not closely connected with the tumor. Douglas' pouch was full of fluid. My diagnosis was solid, probably fibroid tumor of the ovary with ascites.

The operation was performed February 18th, 1886, in the Gates Laparotomy Cottage connected with the Buffalo General Hospital. Chloroform was used, as there was some question in regard to her kidneys. When the abdomen was opened, about six pounds of light straw-colored fluid was evacuated. The incision was then enlarged to about six inches and the tumor lifted out. There were no adhesions. The pedicle, which was very broad, short, and thin, was transfixed, tied in three sections, and separated by the cautery. The abdomen was sponged dry and the wound closed. The recovery was rapid. On the second evening the temperature went up to 101°, on the following morning it was 99°, and never went above 100° again. She returned home on the twelfth day and has remained in perfectly good health ever since. The tumor weighed seven pounds and was clearly a fibroma of the ovary.

CASE III. (No. 61)—*Small round-cell sarcoma of the left ovary; removal; clamp; separation of pedicle; re-opening of the abdomen; death.*

Mrs. M., aged 26, mother of two children, the last two years of age, was brought to me by Dr. N. Saunders, of Randolph, N. Y. She thought the tumor had been growing for about two years, for after her last confinement she noticed a hard bunch on the right side, and this had been increasing ever since, but more rapidly for the last three months. Three weeks before coming to me, she was taken with bronchitis, high fever, and pulse running up to 120-140. This condition continued, but was not so bad at the time that I saw her when her temperature was 102° and her pulse 130. I found the abdomen very much enlarged, mostly on the right side. It also contained some free fluid. I was doubtful as to the diagnosis, but as the patient was evidently going to die very quickly if left alone, I decided to operate at once, though I greatly feared that she would die on the table from shock, if the operation should prove long or difficult.

The operation took place Feb. 24th, 1887, at the Gates Cottage, in the presence of a number of gentlemen. As there were no adhesions, I rapidly enlarged the opening to ten inches and lifted out the tumor. As the pedicle was very short and thick, and seemed to spring mostly from the fundus uteri, and as I fully believed at the time that the tumor was a myoma, I substituted the clamp for the provisional elastic ligature and closed the wound, the operation having lasted thirty-seven minutes. The tumor was solid and friable, weighed 15 lbs., and is un-

doubtedly a round-cell sarcoma of the left ovary. She stood the operation well and made a rapid convalescence. On the ninth day, all the stitches having been removed and the clamp off for several days, I cut away the remains of the pedicle, as there did not seem to be any traction on the pin which held it. That evening the bowels moved several times with considerable straining, and she moved about and sat up in bed. Next morning, I found her with a pulse of 140 and temp. of 101° , whereas the evening before both had been normal. I immediately suspected trouble with the pedicle, and with a probe found that it had partially torn loose and that there was a considerable opening leading directly into the abdominal cavity.

Thinking that there was only one way to save her, I at once anesthetized the patient and opened the peritoneal cavity. I found the remains of the sloughing pedicle attached to the broad ligament, while the fundus uteri was still attached to the lower edge of the incision. It was necessary to tear the uterus loose, when a number of large vessels were exposed in the fundus, which must have furnished the chief blood supply to the tumor, although its origin had evidently been in the ovary. As there was no other way of stopping the hemorrhage from the fundus, I was obliged to include it in the clamp and cut it off, thus doing supravaginal hysterectomy.

The true pedicle in the broad ligament was tied, trimmed, thoroughly canterized, and dropped. I then extended the incision an inch or more towards the symphysis pubis, so as to get a healthy fresh surface of peritoneum with which to surround the stump of the uterus. After this was done I washed out the abdomen with sublimate, 1 to 5,000, finishing with pure water and closed the wound. She rallied somewhat, but died of septicemia on the third day after the second operation.

Solid tumors of the ovary are rare. Sir Spencer Wells in 1,000 cases met with but three, and Mr. Tait declares that "growths of the fibrous stroma of the ovary, so as to form a large abdominal tumor requiring removal, have not yet been described."

In this Mr. Tait is wrong, as a careful study of the literature will show. Case II. was without the shadow of a doubt a genuine fibroma of the ovary.

These three tumors, although all to be classed as solid, differ materially in pathology. The first was an adeno-cystoma not differing at all from an ordinary multilocular cyst, except in the relative proportions of its elements. The second was a fibroid rarer than either of the other two, and especially than the last, the sarcoma. Those who are interested in the pathology of

solid ovarian tumors are 'referred to Dr. Coe's exhaustive paper' on the subject.

CASE IV. (No. 23).—*Pedunculated fibro-myoma of the uterus. Rupture of rectum. Suture. Clamp. Recovery.*

Mrs. M., aged 44. No children. This case I first saw in consultation with Dr. Herman Mynter in August, 1882. At that time a small abdominal tumor had been discovered with some of the symptoms of pregnancy. Ectopic gestation was thought of, but I gave it as my opinion that the tumor was ovarian. In September, 1884, during the illness of Dr. Mynter, the case was placed in my hands. During the interval, the tumor had grown steadily until it was about the size of a child's head six months old. There was then a great deal of constitutional disturbance, pain, and extreme nervousness, which made an effort at relief very desirable. I diagnosed solid ovarian tumor, or possibly a soft uterine fibroid, and advised operation. This was done October 2d, Drs. Park and Bartow assisting; Drs. Burwell and Rochester being present, the latter giving the ether. On getting down to the tumor, I found it of a deep-red color, solid in texture, and but slightly adherent in front. It did not resemble either a fibroma or a cyst in appearance, and several of those present suggested that it might be malignant. Behind the tumor there were several adhesions to the pelvis and a very firm union to the sigmoid flexure of the colon. I peeled the intestine off from the tumor, leaving its peritoneal coat attached to the tumor and the separated portion exceedingly thin. This was rendered all the more evident by the distention of the intestine by fluid, the result of an enema which had been given and retained just before the operation. Having loosened the tumor from all its attachments, I raised it out of the abdominal cavity. I then found the pedicle to be very short, thick, and vascular, and to spring directly from the fundus of the uterus. It was so short that I was certain that if I tied it I would be obliged to leave a portion of the tumor to prevent the ligature from slipping off. This, owing to its suspicious nature, I did not wish to do. If, on the other hand, it proved to be a myoma, the ligature would be equally undesirable. I therefore decided on using the Wilson écraseur clamp and treating the pedicle by the external method. In adjusting the clamp, the upper long flat piece, which rests, when in place, on the abdominal wall, slipped into the peritoneal cavity. Almost instantly there was a free discharge of watery fluid from within, much to the surprise of all. Having adjusted and tightened the wire, I cut off the tumor and sought for the source of the watery discharge. This I quickly determined to be the upper part of the rectum where it had been separated from the tumor. Here I found a longitudinal rent fully two inches long, which had probably been made in the thinned and tense intestinal wall by the clamp.

¹ AM. JOURN. OBSTET. vol. xv., p. 561.

After carefully wiping away the water which had been in the intestine, which was but very slightly stained with fecal matter, I closed the rent by the usual uninterrupted intestinal suture. The toilet of the peritoneum was completed and the wound closed by silver sutures. Over the wound and all around the stump iodoform was freely sprinkled. The operation was very long and there was a good deal of shock. But the patient rallied well and made an uninterrupted and uneventful recovery and remains well to this day. The slough came off in about three weeks and the wound around it healed by granulation. The tumor weighed about ten pounds, and a microscopic examination showed it to be a fibro-myoma.

The principal point of interest in the case is undoubtedly the wounding of the intestine. The conditions which led to this complication are the distention of the intestine by fluid and the extreme thinning of the walls by the separation from the tumor. The distention was due to the carelessness of the nurse, and under any other circumstances would have done no harm. The thinning of the intestinal wall was necessary as a result of the nature of the tumor. Had it been an ordinary cyst, I would have preferred leaving a portion of the cyst wall attached to the gut rather than risk a rupture by a forcible separation, but with a solid tumor this would hardly have been practicable. Had the tumor been cut before the wire was tightened, it would have bled freely, an event to be avoided, and the application of anything to the pedicle was impossible before the adhesions were separated.

In some cases it has been found necessary to resect intestine from the impossibility of separating it, as occurred to me in an ovariectomy (case 27). My case terminated fatally, but the resection had nothing to do with the fatal result. Another reason for not leaving any of the tumor was its suspicious nature. The pedicle was kept exposed to the air and freely dusted with iodoform. In this way it remained perfectly dry for a long time, and until the peritoneal cavity was firmly closed.

CASE V. (No. 31)—*Uterine fibroid; myomotomy; secondary hemorrhage; re-opening of the abdomen; recovery.*

On the 1st of July, 1884, I was consulted by Mrs. W., she having been referred to me by her physician, Dr. W. H. Duke-man, of Olean, N. Y. She was 33 years of age, had been married eleven years, and had borne three children, her last six years before.

Being in humble circumstances, she had always been obliged to work very hard, and had been able to do so until quite re-

cently. Had never been ill. She first noticed an enlargement of the abdomen three years before. For the last year, it had been steadily and rapidly growing. She had not suffered much inconvenience from it until a few months before, when a severe pain in the left side made it impossible for her to move. This lasted for five days, and was unaccompanied by fever. Her menstruation was formerly regular, but latterly had been too frequent, occurring every two or three weeks, but was not very severe. There had been a continuous brownish discharge for some time. She presented an anxious expression, with considerable emaciation which she said had come on mostly in the last two months. Her lungs, heart, and kidneys were all normal as far as could be determined. On inspection, I found the abdomen much distended, but somewhat irregular. The umbilicus pouted as large as an egg, the growth being evidently filled with fluid and connected with the abdominal cavity. On palpation, it was easily made out that the whole abdominal cavity up to the ribs was filled by a tumor. Deep, sudden pressure gave a sensation like ballottement or of a fluid quickly receding, and revealing to the touch a hard mass below. This could be felt on both sides, one side at a time, according to position. The tumor seemed firm and solid, but not very hard. Percussion showed dulness, and there was no distinct fluctuation *per vaginam*. The uterus was found pushed to the symphysis, and somewhat enlarged. Douglas' cul-de-sac was filled with fluid, and contained a hard, movable body larger than an egg, which gave ballottement perfectly.

The diagnosis was doubtful. It might be either a solid tumor of the uterus or ovary or perhaps of some other organ, possibly a tense cyst, with thick walls and colloid contents. I was rather inclined towards a soft tumor of the ovary, from the absence of marked uterine signs and symptoms and from the presence of ascites, though the large size was against this view. The presence of fluid between the tumor and the abdominal walls led me to conclude that there were very few adhesions.

I advised an exploratory incision, and removal of the tumor if found practicable. The operation was performed in a private house July 8th, 1885, at 11 A.M., Drs. Park, Bartow, and Gayer assisting me. I first made a short incision through the abdominal walls a little below the umbilicus. On opening the peritoneum, a considerable quantity of fluid escaped. By introducing my finger and a sound, I readily determined that there were no adhesions in front, and that the tumor was nearly solid. Introducing my whole hand, I found there were no adhesions anywhere, and that the tumor was attached to the fundus uteri by a small, short pedicle. Everything being favorable, I determined on removal. I first plunged the needle of an aspirator deeply into the mass in hopes of finding fluid. In this I was disappointed, but the needle prick bled profusely. I therefore quickly enlarged the abdominal incision from near the symphy-

sis pubis to above the umbilicus, and evacuated two or three small superficial cysts on the upper part of the tumor. Desiring to reduce the size of the mass as much as possible before removing it, and fearing hemorrhage if I cut into it, I passed a doubled rubber tube around the pedicle, drawing it tightly, and securing it with a clamp. I then split the tumor longitudinally half way through, opening and evacuating several more small cysts. One-half was then slipped out of the abdomen, and by a half-turn the other followed, and the tumor was then cut away. The blood and fluid from the cysts were caught by large, flat sponges packed around and under the tumor. The incision was more than seven inches long. Having determined to treat the pedicle by the external method, I substituted the wire of Wilson's clamp for the rubber tube and trimmed off the pedicle. Having got it well reduced, being tempted by its smallness and from knowing well the danger, annoyance, and inconvenience of the external method, I unfortunately changed my mind, and decided to tie and drop the pedicle. As the needle puncture had bled so freely, and as the pedicle was very short, I feared to transfix and tie in two halves, but put the silk around the whole mass, sinking it deeply into the track made by the wire. I pulled it very tightly, and asked my assistant to try after I had exerted my utmost strength. Having further trimmed off the pedicle, I slowly and carefully cauterized the whole cut surface with the thermo-cautery, and dropped it.

After this the abdomen was thoroughly cleansed, and the wound closed by deep silver and superficial catgut sutures, the umbilical hernia being first cut out. The uterus was slightly enlarged and the ovaries normal. The operation lasted about an hour and was not difficult. The tumor was a soft myoma. It was round and smooth, of a dark reddish hue, entirely unlike an ovarian cyst or a hard fibroid. It weighed fifteen pounds. The mass felt in Douglas' pouch was a small pediculated tumor attached to the main body, near its connection with the uterus.

The operation was completed at noon. The patient recovered nicely from the shock, her pulse being strong and good. About 6.30 P.M. she rather suddenly began to fail, the pulse growing weak and rapid, 120 and more to the minute. The nurse, who was intelligent and experienced, immediately sent for me, and began giving hypodermic injections of brandy, repeating them every fifteen, ten, and finally every five minutes. I arrived about 7.45, and found the patient almost pulseless and profoundly collapsed. I diagnosed internal hemorrhage. Ordering the brandy kept up, I hastily summoned Drs. Park and Bartow, who lived near and quickly responded. Securing my instruments and sponges by 8 o'clock, I placed the patient on the table without an anesthetic. Quickly removing the two lower sutures, I passed in my finger, and on withdrawing it a stream of blood gushed forth. After removing five more sutures I passed in my hands, and having bailed out a quantity of blood and clots, got hold of

the uterus with both hands and pressed my thumbs tightly over the surface of the pedicle. This served to stop the hemorrhage for the time. The silk ligature had slipped entirely off and was never found. The clamp being made ready by Dr. Park, I passed a needle deeply through the pedicle from side to side and the wire under it, which being tightened, effectually stopped the flow. The bleeding came from several small vessels on the peritoneal edge of the pedicle which had not been effectually sealed by the cautery. Other larger vessels had been fortunately closed, otherwise she would have bled to death before I got there. After the pedicle was secured the hardest part remained, for the abdomen was full of blood and clots which it was necessary to remove. The passage of the sponges, especially when they went down into Douglas' cul-de-sac, gave the patient extreme pain. Her groans and screams, mingled with prayers and curses; her imprecations and pitiful appeals to be allowed to die, with the blood everywhere; the more or less excitement of all concerned, and the fast falling twilight, made a scene the tragic interest of which I have never seen equalled.

Never before did I half appreciate what we owe to the discovery of anesthesia, nor understand so fully the bravery of both surgeon and patient in the olden time. If McDowell deserves a monument (and who will deny the justice of his claim), almost to an equal extent is one due to the subject of his first operation, Mrs. Crawford. Here was a bravery perhaps made desperate by despair, but still a bravery, a heroism which richly deserves a place in the record of heroic deeds.

But to return to our case. Notwithstanding the obstacles, the cleansing process was faithfully carried out, a large basin full of blood and clots being removed. It was particularly difficult to get out the accumulation from in front of the uterus where the broad ligament had dammed it up. Everything being finally cleaned, the wound was reclosed, the needle causing less pain than I had expected, the peritoneum seeming to be the most tender surface. While Dr. Clark and I had been working in the abdomen, Dr. Bartow had plied the hypodermic syringe and used nitrate of amyl, so that when she left the table the pulse, though rapid and weak, was still quite perceptible. At 9 P.M., the pulse could be counted at the wrist at 135. At midnight she was quite comfortable, taking a little morphine under the skin and brandy and strong green tea by the mouth. She slept after this and rapidly improved. At 9 A.M., she had secreted no urine and her pulse was very weak. I ordered a pint of warm water to be thrown well up into the rectum and to be retained, also ten drops of fluid extract of digitalis every two hours. In the afternoon she was much better, the pulse slower and stronger, and the kidneys had begun to act. She was ordered milk and beef peptonoids every hour. On the second day after the operation her head was placed on a pillow, the foot of the bed let down, her clothing changed, and the wound dressed for the first time. The stump

and surrounding parts were quite dry. The iodoform dressing was continued with full exposure to the air. There was some trouble with singultus and vomiting, but this soon subsided after stopping the morphine. On the fifth day the bowels were freely moved, the patient feeling very comfortable and well. On the seventh day seven stitches were removed above the clamp, and on the eighth day the clamp itself was taken off, an elastic ligature taking its place, the needle through the stump being left *in situ*.

On the fourteenth day she was taken to a ward of the Buffalo General Hospital.

On the sixteenth day the needle and ligature came away, only a small portion of the sloughing pedicle remaining. This had sunk deeply into the abdominal wall, so that it seemed to be at the bottom of a deep sinus.

This sinus gradually closed, and the patient was finally discharged cured. She has since become as strong and robust as ever she was.

The temperature was rather higher than I have usually observed after aseptic cases. The evening following the operation it reached 103° , and continued with an evening rise of 101° , and morning 100° , until the ninth day, when the occurrence of a little abscess in the abdominal walls below the clamp carried it up to 103° again. It soon fell, but it was not until after the twenty-fourth day that it remained permanently below 100° . Strict antisepsis was hardly possible, and doubtless a little absorption took place from around the sloughing stump.

The principal points of interest about this case are the treatment of the pedicle and the re-opening of the abdominal wound. The latter procedure was manifestly the only thing to do. But, one instinctively and naturally shrinks from re-opening an operation wound, especially when this involves the abdominal cavity. This is certainly wrong, and is but a part of the unfortunate inheritance which we have received from the past generation. There is even yet too much fear of the peritoneum. As long as the tumor is there we do not so much hesitate, but with the tumor gone the charm seems to be broken. Perhaps, also, the dread of the unknown conditions which we are to meet, the doubt in the diagnosis, and the uncertainty of the result, the fear of increasing shock have something to do with it. Be this as it may, I am sure cases have been left to die where a re-opening of the wound might have saved them. The result in this case is certainly encouraging. In two cases reported by Dr. Keith, where secondary hemorrhage followed operation, he opened the wounds at the end of two or three days, letting out an immense amount of putrid blood and clots.

But if the diagnosis can be made, I should prefer to open at once, check the hemorrhage, and clean the peritoneal cavity of all its foreign contents, thus diminishing the danger of increased loss of blood and of septic infection.

In Case II., where I re-opened the abdomen after the tearing away of the pedicle, although the result was not so good, the indications were, it seems to me, equally plain. To have left a sloughing mass, even though small, within the abdominal cavity was but to invite certain death from septicemia. Nor would intra-abdominal injections with drainage have offered any better chances. The patient, as it were, did not die of the secondary operation, but in spite of it. The operation was done in a room of the old hospital building, whither the patient had been removed, and this may have perhaps had something to do with the result. Under similar circumstances, I should certainly advise the same treatment again.

The hot-water enema in Case V. seemed to answer a most excellent purpose. It quickly made up the bulk of the blood, started the secretions, and improved the patient's condition very rapidly without any tax on the stomach, and also without the difficulties and uncertainties of transfusion.

CASE VI. (No. 50)—*Uterine fibroid; hysterectomy; clamp; recovery.*

Mrs. H., aged 42, was referred to me by Dr. D. D. Loop, of North-East, Pennsylvania. She had been married twenty-six years, and had borne five children, the last twelve years before. Had never been well since her second child was born, suffering constantly from uterine disease. Her menstruation had lately been very profuse and frequent, and for two years had been accompanied by agonizing pain. Dr. Loop had first detected the tumor one year before. The patient was anxious, with thin, drawn face, dark rings around the eyes, and exceedingly pale. Inspection showed the abdomen moderately enlarged, the principal distention being in the middle. By palpation could be felt a smooth, round tumor, reaching from a little above the pelvic brim to above the navel. The tumor seemed broad and flat, and was quite movable. There was no evidence of fluid anywhere. By the vagina, the uterus was found to be the seat of a cervical laceration, with enormous hypertrophy of the lips. The sound passed in to a depth of three and one-half inches.

The diagnosis was uterine fibroid attached to or growing in the fundus uteri. Removal of the ovaries or tumor as could be best done was suggested, but not urged, the full gravity of the operation being explained. The patient went home, but in two months

returned, desiring that something be done. She had steadily grown worse, and was anxious for relief. I operated June 22d, 1886, in the Gates Cottage, assisted by Dr. E. H. Norton and the house staff, Drs. Park and Loop being present.

There was found to be no chance of removing the ovaries, as they were buried in a mass of firm pelvic adhesions, and could not be found even after the tumor was removed. The tumor greatly resembled that in Case IV., only the pedicle was longer, and could not be distinguished from the fundus uteri. There were many long, soft adhesions, which were readily broken. A few ounces of ascitic fluid escaped. After putting an elastic tube around the pedicle, the tumor was cut away. The wire clamp was then substituted, and the operation completed as usual. Great care was taken to adjust the peritoneum nicely around the neck of the tumor. The wound was closed by three rows of suture, one silver and two catgut. The abdominal walls were at least three inches thick. No blood was lost, and the patient rallied nicely. As there was some protrusion of the umbilicus, it was cut out. The tumor proved to be a hard fibroid weighing about five pounds. A portion of the fundus uteri was removed, but the cavity was not opened.

The patient did well, the temperature being above 100° for only twenty-four hours, until the fifteenth day, when an abscess developed in the abdominal walls under the whole length of the incision, which was about six inches long. This I attribute to a catgut drain which I put in, owing to the great amount of fat in the walls. The abscess healed slowly, but the patient left the hospital at the end of seven weeks with only a small granulating surface still unhealed.

Since then, Dr. Loop informs me that she is much better than for years past. She has no pain at her menstrual periods (an unusual thing) or pain in the abdomen. Her digestion is good, and her general health greatly improved. He closes by saying: "I think the operation a complete success in every particular."

CASE VII. (No. 33)—*Fibroid enlargement of the corpus uteri; hysterectomy; clamp; recovery.*

Mrs. C., aged 36, mother of four children, was referred to me by Dr. Slacer, of Buffalo. She stated that she had always been well and strong. She was small and thin, and seemed to be of a good constitution. She had noticed a tumor in the lower part of the abdomen two months before coming to me. Since finding it, she had lost flesh rapidly and grown very nervous. The tumor had grown fast and made the patient exceedingly anxious. Her menstruation was natural and regular. There was a round, smooth tumor in the hypogastrium reaching to the umbilicus. The tumor was soft and freely movable from side to side. No fluctuation discernible. Diagnosis doubtful, either an ovarian adeno-cystoma with excess of solid tissue, like Case I., or a soft edematous fibroid. An operation was advised, on account of the rapid rate at which the tumor was growing.

The operation was done November 19th, 1885, at the patient's home on the outskirts of the city, Drs. Park, Slacer, and Gager assisting. No adhesions were found. The tumor seemed to involve the fundus uteri, and the cervix and broad ligaments made up the pedicle. A temporary ligature of rubber tubing was applied and the tumor cut away. The clamp was then adjusted, the peritoneal cavity cleaned, the peritoneum closely sewed to the stump, and the wound closed. The patient made a rapid recovery, neither pulse nor temperature going for more than a few hours above 100. The tumor was a general fibroid or, more strictly, myomatous enlargement of the body of the uterus, and was quite edematous. It weighed about five pounds.

CASE VIII. (No. 54)—*Uterine fibroid; large pus-cavity; recent pregnancy; hysterectomy; clamp; recovery.*

Mrs. C., patient of Dr. Rood, of Cherry Creek, N. Y., aged 38, mother of two children. She first noticed the growth between seven and eight years before, it showing itself first in the left ovarian region. It had grown slowly ever since. Six months before coming to me, she had had an abortion at the third month, brought on by her physician on account of her condition. Four months later, she began to have slight chills followed by high fever, coming on every three or four days. During the last year, she had lost sixty pounds of flesh, and was growing steadily and rapidly worse. Her temperature when I saw her was 101°, and pulse 120. Menstruation occurred every two weeks and was very profuse. The abdomen was conical and irregular in shape. The tumor was firm, but not stony hard: somewhat irregular in outline, and gave a rather distinct sense of deep fluctuation. The greatest measurement around the abdomen was 38". The tumor could not be touched through the vagina. The diagnosis was suppurating ovarian cyst, multilocular, with probable adhesions. An operation was strongly urged, as affording the only hope for life, though its success was stated to be doubtful.

The operation was done October 7th, 1886, at the Gates Cottage, Dr. Norton and the house staff assisting; Drs. Rood and Caneen being present. On opening the abdominal cavity, I found universal adhesions, but they were delicate and easily broken and did not bleed. The tumor looked white like an ovarian cyst, and at first I did not recognize its true nature. It seemed to contain fluid, and on pushing the large trocar deeply into it, I evacuated nearly two quarts of pus. The pedicle was very broad and thin, and I tried to tie it in sections with a view of dropping it. But before I had gone very far, I recognized what I had to deal with, and put on the elastic ligature and removed the tumor. The clamp was then substituted for the ligature, the pedicle trimmed, and the peritoneal cavity cleaned. I took the utmost care to prevent any pus from gaining access to the peritoneal cavity; but for fear that it might have done so, I washed out the cavity freely with warm, previously boiled water. The peritoneum was sewed

to the stump as usual and closed entirely by catgut sutures, the whole thickness of the abdominal walls being secured by silver wire.

On the first and second evenings, the temperature reached 102° and never reached that point again. The clamp was removed on the tenth day, the slough soon came away, and the patient made an excellent recovery. An examination of the tumor proved it to be a uterine fibro-cyst, and to be not so much a distinct tumor as a general enlargement of the uterine body, almost exactly like Case VII. The most astonishing thing is that a uterus so affected could become pregnant. The pus-cavity is ragged and irregular, and had nearly made its way through into the uterine cavity. Had it done so, the diagnosis would have been still more puzzling. The tumor including the pus weighed 16 lbs.

CASE IX. (No. 60)—*Double ovarian cyst; fibroid of fundus uteri; removal; recovery.*

Mrs. H., aged 48, was brought to me February 11th, 1887, by Dr. Sutherland, of Bolivar, N. Y. She had suffered a great deal from rectal obstruction for a number of years. First noticed that she was enlarging last October. Diagnosis: multilocular cyst with colloid contents.

Operation was done in the Gates Cottage February 13th, 1887. The diagnosis proved correct, only that there were two cysts, one on each side. They were both removed, and the pedicles tied and dropped. I then discovered a fibroid as large as an orange attached by a short, thick, fleshy pedicle to the fundus uteri. Thinking that this was the cause of the obstruction to the lower bowel, as it lay low in the pelvis, I put the clamp around the pedicle and removed the tumor. She made an uninterrupted and prompt recovery.

It may not be inappropriate to close these histories with a few remarks in reference to the operation in general. To what conclusion does a consideration of these cases lead us?

First, as to the possibility of operating on solid uterine and ovarian tumors. From the remarks frequently quoted to me by patients, I am convinced that the general profession still very largely labors under the belief that solid tumors of the ovary and of the uterus, unless they present at the os, are beyond surgical help. Now it will be seen from the cases here recorded that the removal of solid ovarian tumors is not more dangerous than the removal of cysts, nor are these results much different from those obtained by other operators. In regard to uterine fibroids, a few statistics, quoted from American or foreign writers, added to these cases will quickly set that matter at rest. Take, for instance, Schroeder's table, in Hofmeier's

book of one hundred supravaginal hysterectomies, and Keith's thirty-eight cases with three deaths; they are enough to show the possibilities in the hands of competent operators.

In the matter of diagnosis, it is a fact which will, I think, be admitted by all, that the diagnosis of solid tumors is more difficult than that of cysts. In four of these nine cases I made a definite diagnosis, and was right in three and in one wrong. In four others, I gave a guarded opinion, advising an exploratory incision to settle the matter. The justifiability of this procedure was fully sustained by the result. I know of no other way in which the diagnosis of a doubtful tumor—doubtful either as to its nature, its origin, or the possibilities of relief by operation—can be cleared up. The exigencies of the case are often such as to justify one in following the rule: "When you don't know, cut down and see." Exploratory incision is in many instances less dangerous than leaving the case alone, and if the operator is careful not to burn his ships behind him before he is sure he can win, may more often be resorted to than has been done in the past, and with the very best results.

As to the diagnosis of adhesions, the length of pedicle, and attachments to other organs, I do not believe that any one without opening the abdomen can do anything more than guess.

The appearance of a soft myoma, when the abdomen is opened, is quite different from that of either a true fibroid or a cyst. It is much darker, more vascular, and softer to the touch.

Regarding the indications for operation, if the diagnosis of ovarian tumor can be made with anything like accuracy, there is no doubt; but in the case of uterine tumors the matter is more uncertain. As to this point, no one is more qualified to speak, both by experience and good judgment, than Keith with his wonderful record. He, if any one, can speak *ex cathedra*. As he only operates on bad cases, his results are all the more wonderful.

In his monograph on hysterectomy for uterine fibroids, which with its plain, honest, quaint style is one of the most charming of recent contribution to medical literature, he limits the cases in which hysterectomy may be reasonably advised to

1st. Very large, rapidly growing tumors of all kinds in young women. By a large tumor I mean twenty pounds.

2d. In all cases of real fibrous cystic tumors, if they can be removed; also in all cases of suppurating tumors.

3d. In most of the cases of the soft edematous fibrous tumor. They often grow to an enormous size, far larger often than any ovarian tumor.

4th. In cases of large bleeding fibroids of any age, provided that the patients are not approaching fifty years of age and provided that their lives are practically useless, and that further experience in the operation shall show that the mortality of hysterectomy is likely to diminish.

5th. In certain cases of tumors surrounded by free fluid the result of peritonitis, provided that the fluid shows a tendency to re-accumulate after two or three punctures."

"These embrace every form of case in which I have yet ventured to interfere by operation."

It will be seen that these include a very small percentage of cases of fibroids. Every one of my cases might find a place in one or the other of these classes with one exception, and for that (case VI.) may we not make another class, viz., fibroid tumors, no matter what their size, which by their presence through pain and suffering are gradually wearing out the life of the patient and making that life, while it does last, not worth living. That such cases do exist, and that they do cause death even before reaching a great size, I have had several opportunities of observing. To leave such patients to a slow, lingering, agonizing death seems to me scarcely justifiable when so good a chance for relief and life seems to be afforded.

Another class of cases may ultimately be added to those fit for supravaginal hysterectomy, as has recently been proposed and done: that is, those cases of sloughing intrauterine fibroids where septicemia already exists, and where enucleation only adds to the danger by affording new avenues for absorption. Three cases of this kind have come under my notice where death occurred notwithstanding apparently a clean removal and the most persistent use of antiseptic intrauterine injections afterwards. This would, of course, include sessile tumors attached inside the womb.

I look forward to the time when these indications will be very much increased in number. In fact, it now seems to me that in the case of moderatley large fibroids situated in the upper part of the uterine body, and not adherent, as they seldom are, supra-

vaginal hysterectomy offers nearly as good a chance of success as does ovariectomy in a simple ovarian cyst. I can see no reason why this is not so, and am confident that these cases will eventually be much more commonly operated on than at present. So far our statistics have been obtained from large tumors and bad cases, two conditions which tend to render the results unsatisfactory.

Removal of the uterine appendages is advocated as preferable to hysterectomy. In only one of these five cases could it have even been seriously considered, and in this case (VII.) it is very questionable whether the removal of these organs would have had any effect on an edematous and rapidly increasing tumor. I have performed the operation but once, and the experience gained in that case convinces me that it may be one of the most difficult in the whole range of abdominal surgery, while the uncertainty of the ultimate result is in marked contrast with that obtained in successful hysterectomy; nevertheless it is undoubtedly the better operation in certain cases.

The superior safety of the external over the internal treatment of the pedicle in fibroids is here clearly demonstrated. As Keith says, and as Case V. shows, muscular tissue is ill adapted to bearing a ligature. Keith remarks: "It will not always do here, as in ovariectomy, to transfix, tie, and drop"; and again: "The difficulty of applying ligatures safely to the tissue of uterine fibroids is great. You tie as tightly as you can draw the threads, and in an hour or two the muscular tissue has contracted and internal hemorrhage goes on." Had I minded these words of wisdom, I might have been saved the trouble in Case V. If this is true of uterine tumors, it is not true for ovarian tumors, even when solid. Had I made a correct diagnosis in Case III. (sarcoma of ovary), and tied and dropped the pedicle, as I can now clearly see should have been done, the woman would probably be living to-day. But the appearance of the tumor, the history of the case, and, above all, the attachment to the fundus uteri deceived me. I was operating in a hurry, having been impressed before I began with the strong probability that the patient would die on the table. A weak pulse at 140 certainly gave force to that idea. There is a great difference in the character of a pedicle made up of connective tissue and one formed of muscular fibres. Another reason why there is more danger in the clamp in ovarian than in uterine tumors is the

situation of the pedicle. The central position of the pedicle in supravaginal hysterectomy makes the tension much more even and therefore less liable to be torn away by movement on the part of the patient. This patient was very restless and headstrong, and it was almost impossible to keep her still. After her second confinement, she got up and did her work on the third day. I mention this as showing the character of the individual. The cutting away of the stump on the ninth day could have had no effect, as it lay quite loose in the wound. Still there is another side to the question, and the brilliant results obtained in Berlin make it our duty to more carefully study their methods and results. I have had no experience with this method of treating the pedicle.

I cannot but consider some share of my success to be due to the use of the Wilson¹ clamp. The absolute immobility thus secured certainly favors prompt union between the abdominal peritoneum and that of the stump. It can be easily tightened, is safe from slipping off, and causes no pain or undue pressure on the skin. At the same time, it makes it possible to get at and dress the stump as often as desired, the abdominal walls being held well away from the pedicle on every side and not allowed to bulge up and hide it, as occurs when the needles alone are used. I have modified the clamp a little, substituting wire for the chain, and attaching it to an ordinary Braxton Hicks écraseur, thus materially reducing the cost.

It seems hardly necessary for me to say that in all my operations I carry out the most strict and careful antisepsis, putting the nail-brush and soap as first in the list of antiseptics.

¹ AM. JOURN. OBSTET., vol. xvi., p. 392.

REMARKS ON THE TREATMENT OF LABOR IN CONTRACTED PELVIS.

BY

DANIEL LONGAKER, M.D.,

Lecturer on Obstetrics, Philadelphia Lying-in Asylum.

THE forms of contraction of the pelvis which are most frequent, and therefore practically the most important, are the flat pelvis and the generally contracted. In the former, the conjugate diameters alone are shortened, the transverse being normal, and in the latter both are diminished. An equal diminution of all these diameters from brim to outlet constitutes the pelvis equibilater justo-minor, the rarest of these commoner forms of narrowing. Those cases in which all the diameters are shortened are usually unequally narrowed, and take either the type of the flat or of the malacosteon pelvis.

In the vast majority of cases, the degree of narrowing is moderate and not sufficient to render the birth of a living child, under favorable circumstances, impossible. It was thought best to limit this clinical report to this class of cases.

In the class of moderate narrowing are included flat pelves, having a conjugate diameter from $3\frac{1}{2}$ inches to 3 inches, or a little less, and generally contracted pelves with a conjugate of at least $3\frac{1}{3}$ inches.

The flat pelvis may be of rachitic or non-rachitic origin; in the latter case, the contraction is, according to Schroeder,¹ rarely less than 8 cm. or $3\frac{1}{8}$ inches. This is also the most frequent form of narrowing even in localities in which rickets is a common disease.

The peculiarities of the flat non-rachitic pelvis are the downward and forward displacement of the entire sacrum and the normal relation of the distance between the anterior superior iliac spines and the crests of the ilium; the external conjugate is below the average. The conjugate diameter of superior, inferior strait, and cavity are encroached upon. The causes of this distortion are not well recognized.

In the flat rachitic pelvis, the conjugate of the brim alone is

¹ "Lehrbuch der Geburtshülfe," Schröder, Bonn, 1872, p. 431.

narrowed. The promontory of the sacrum is displaced downward and forward; the second and third sacral vertebræ are displaced backward, causing the antero-posterior measurement of the cavity to be ample, while the lower extremity of the sacrum, bent forward, encroaches upon the antero-posterior diameter of the outlet. The tuberosities of the ischia diverge so as to increase the transverse diameter of the outlet. The pelvis is shallow. All of the sacral vertebræ are displaced forwards, obliterating the transverse concavity of the sacrum and causing it to be convex. (The perpendicular concavity is increased.) This is most marked at the promontory, where the true conjugate may be a half-inch shorter than the antero-posterior distance from each ala to the symphysis pubis. This has been termed the lateral conjugate. External measurement shows a relative decrease in the width of the crests compared with the anterior superior iliac spines. The relation may even be inverted. Decided degrees of flattening are, as a rule, of rachitic origin.

Without further preliminary observations, I will report six cases.

CASE I.—Flat non-rachitic pelvis; conj., $3\frac{1}{2}$ inches; craniotomy.

Mrs. G., Irish, age 29; fourth pregnancy. Her first and second labors were unaided, and the third child was stillborn and macerated. She is a little under the average height. The pelvis has the following measurements:

Anterior superior iliac spines, 10 inches.

Distance between the crests, $11\frac{1}{4}$ "

External conjugate, $7\frac{1}{2}$ "

True conjugate (estimated), $3\frac{1}{2}$ "

I saw the case for the first time on the evening of November 25th, 1885, at the request of Dr. Howard B. Martin. She had been in active labor twelve hours. The os was partially dilated and dilatable, the edematous vaginal cervix being in advance of the presenting part. The membranes had ruptured early. She was exhausted. The head was fixed at the brim and the brow presented, but a very small segment of the head having descended below the plane of the superior strait. The great prominence of the head on palpation left me in doubt whether it was not a case of hydrocephalus. Cephalic version was attempted, but the head could not be moved. The diminished conjugate, the large size of the head, and an unfavorable presentation led me to abandon all hope of delivering a living child. As several attempts to deliver with forceps had been made, I was averse to repeating these and favored perforation. My associates would not consent to this until the condition of the patient became desperate and several

more trials with forceps had been made. Six hours after my first examination, the head being in exactly the position then found, perforation was done. The vault of the cranium was crushed at various points with the Simpson cranioclast; the face was finally brought down and extraction completed in one hour from the commencement of the operation. The cranioclast was also used in extraction. No spiculæ of bone projected beyond the scalp. The child, a male, weighed, excerebrated, ten pounds. The uterus after delivery was large and tender, and there was some flooding; this was controlled by a hot carbolized injection. Her temperature twelve hours after delivery was 101.8° Fahr. and on the evening of the second day 103° . This was the highest temperature, though it was above the normal for many days after delivery. The patient had a severe attack of metritis. On the seventh day, the left lower extremity became very painful, the foot was moderately swollen and pitted on pressure. Her convalescence was slow, but ultimately she entirely recovered.

This case is a very instructive one in many respects. The brow descended, owing to the arrest of the occiput at the linea terminalis, due to the large size of the head. This is simply an exaggerated degree of the extension usually observed in labor complicated by flattened pelvis. It must, however, be remembered that this is only one of the causes of brow presentation. Occurring in a pelvis which is ample, the birth of a living child is not impossible, but occurs only after delay sufficient for the necessary moulding. The head is converted into a triangular shape from the compression of the occiput between the pelvic walls and the dorsum of the child, the fronto-mental and suboccipito-frontal diameters are increased and the distance between the chin and the sagittal suture anterior to the occiput is diminished. In order that delivery may be possible, the brow must rotate anteriorly and engage under the arch of the pubis, the occiput rotating into the hollow of the sacrum. The cranial vault sweeps over the perineum; the upper jaw, mouth, and chin afterward making their appearance under the symphysis pubis.¹ With the antero-posterior diameter shortened, this mechanism is hardly possible.

This case illustrates the more unfavorable prognosis in labors subsequent to the first in flat pelvis, the two principal reasons being the larger size of the child and the relaxation of the abdominal muscles. This, in a measure, serves to justify Winter's plan of treatment, as stated in an editorial in the *Medical News*,

¹ Lusk, "Science and Art of Midwifery," 1885, C. 200.

February 19th, 1887, which is expectancy for primiparous patients and early version in multiparous.

The employment of powerful traction efforts, first with one pair of forceps and then with another, until three or four pairs have been tried, is a reprehensible and dangerous procedure. When gentlemen of mature years say that in difficult deliveries they desire no "light weights," the reason for the fatal result to mother and child of many forceps operations is apparent. The one hundred and nineteen tabulated cases of Harold Williams,¹ with an infant mortality of over sixty per cent and a maternal mortality of about forty per cent, prove nothing but abuse of this valuable instrument.

With regard to craniotomy, I can only say that I regret not that the child was destroyed, but that it was not done sooner. The reflection that we did our best for the child, which Barnes thinks sufficient, was a poor consolation when the injury thus inflicted on the mother was so serious as almost to sacrifice her life. In spite of the prophetic declaration of the late president of the American Gynecological Association, we may venture to say that the day is very far distant, perhaps it may never dawn, when craniotomy will be banished from the list of obstetric operations. It is a conservative operation, so far as the mother is concerned, and her life should nearly always be saved thereby.

CASE II.—Flat non-rachitic pelvis. Conj., $3\frac{1}{2}$ inches. Forceps. A. W., American, age 25; fourth pregnancy, two being miscarriages. Her first child was delivered by forceps, alive, at full time. She is a blonde of average size. Pelvis has the following measurements:

Anterior superior iliac spines, $9\frac{1}{2}$ inches.

Distance between the crests, $10\frac{1}{2}$ inches.

External conj., 7 inches.

Estimated true conj., $3\frac{1}{2}$ inches.

Patient taken in labor during the night of February 18th, 1887. At 5 P.M., February 19th, three hours after the membranes had ruptured, the Hodge forceps were applied. The head was at the brim, partially extended, entirely within the cervix, the anterior lip of which was edematous and near the vulva; the posterior vaginal wall was swollen. The occiput was on the right side, the sagittal suture nearly parallel with the transverse diameter of the pelvis. Delivery was accomplished in one hour. The child was a female, living, and weighed 9 pounds. She convalesced without an unfavorable symptom.

CASE III.—Flat rachitic pelvis. Conj., $3\frac{1}{2}$ inches. Forceps.

¹AM. JOURN. OF OBSTET., Jan., 1879.

T. S., colored, age 18; first pregnancy. She is of average height and apparently well developed.

The measurements of the pelvis are as follows:

Anterior superior iliac spines, $10\frac{1}{4}$ inches.

Distance between the crests, $10\frac{3}{4}$ inches.

External conj., $7\frac{1}{2}$ inches.

True conj. (estimated), $3\frac{1}{2}$ inches.

Labor pains began November 5th, 1886, at 4 p.m. Dilatation was completed in nineteen hours. When the expulsive stage had lasted two hours, the head being fixed in the cavity of the pelvis, partially flexed, occiput on the left side and slightly anterior, the forceps were applied (Davis). Delivery was quickly completed. The child, a female, weighed eight pounds. Her convalescence was perfectly normal.

The difficulties of delivery in flat pelvis with a conjugate of three and one-half inches may be slight or very great. This is well illustrated by these three cases. Frequently, deviation from the normal mechanism may be the only abnormality observed. When flexion is incomplete, so that the anterior fontanelle is within easy reach of the examining finger, and the sagittal suture approximately parallel with the transverse diameter of the pelvis, flattening should always be suspected.

CASE IV.—Flat rachitic pelvis. Conj., 3 inches. Tarnier forceps. E. R., colored, aged 22; second pregnancy. Her first child was born without assistance, after labor had lasted sixty hours. The child was alive; it was of small size. A large portion of the cervix posteriorly had sloughed away as the result of this prolonged labor. She is of medium size, and the long bones of the extremities show marked evidences of rickets.

The pelvis has the following measurements:

Anterior superior iliac spines, $9\frac{1}{4}$ inches.

Distance between the crests, $9\frac{3}{4}$ inches.

External conj., $6\frac{1}{4}$ inches.

True conj. (estimated), —3 inches, $7\frac{1}{2}$ centimetres.

Labor began on the morning of July 16th, 1886. The membranes ruptured at 3 p.m., nine hours after the pains began, and a portion of the amniotic fluid drained away. The head presented at the brim; occiput to the left ilium. Marked anterior obliquity of the uterus was present. The patient was placed in the dorsal, semi-reclining posture early in labor. Four hours after rupture of the membranes, the os was in a dilatable condition. Quinia bisulph., grs. xv., in capsule was given, and after waiting two hours longer, axis-traction forceps were applied. The head was fixed at the brim with a marked Naegele obliquity, the sagittal suture looking toward the promontory and about one-half inch below it, the two fontanelles occupying the same plane. The instruments locked without difficulty and were

applied with one blade over the face and the other over the occiput. Gentle and intermittent traction was made and in fifteen minutes the head had passed the point of narrowing. As the instrument was removed, a loop of the cord was brought out, having been caught by the extremity of the right blade. The delivery was now quickly completed. The child was a male, weighing eight pounds. It made no inspiratory efforts for fully half an hour and died twenty-four hours later. The patient convalesced without a single unfavorable symptom, the temperature at no time going above 99° .

CASE V.—Flat rachitis pelvis. Conj., three inches. Induced premature labor and Tarnier forceps.

N. W., American, age 24; third pregnancy. Her first two children were still-born at full time. In her second pregnancy she was delivered by forceps. Her height is fifty and one-half inches; weight, one hundred and twenty-four pounds. She presents well-marked rickety deformity.

Pelvis measures as follows:

Anterior superior iliac spines, $9\frac{1}{2}$ in.

Distance between the crests, $9\frac{3}{4}$ in.

External conj., $6\frac{1}{2}$ in.

True conj., —3 in., $7\frac{1}{2}$ cm.

Jan. 12th, 1887, labor was induced at what was supposed to be the thirty-fourth week of gestation. The bougie was used. The membranes were accidentally ruptured above the os internum. Pains began one-half hour later, and in seven hours dilatation was complete. The head had become moulded and fixed at the brim, the sagittal suture towards the promontory and about half an inch below it; the occiput directed toward the left side with the two fontanelles on the same plane. Her pains, very frequent and strongly expulsive, rendered the introduction of the blades somewhat difficult. They were passed directly to the sides of the pelvis, one over the face and the other over the occiput. Locking was easy. Intermittent traction, with slight compression only, was made, the presenting part advancing gradually, and finally slipping by the obstruction with a jerk. Ten or twelve traction efforts were made, and the operation lasted twenty-five minutes. Traction to the extent of fifty pounds was certainly not made. The head was remarkably moulded; the left parietal bone was indented, the indentation extending across the coronal suture to the frontal bone, where it ended in a contused wound of the temple. The child, a male, was alive, and weighed seven and a half pounds. By the fifth day, the moulding and slight bruising of the face had almost disappeared. The bitemporal diameter of the head soon after delivery measured two and three-quarter inches. Mother and child did remarkably well during convalescence, and were dismissed on the eighteenth day.

There was not a doubt that gestation in this case had advanced to the thirty-eighth week.

We have here five women with pelves narrowed in the conjugate diameter to three and a half inches, and in two of them to a little less than three inches, and we find that the expectant plan, with the use of the forceps, has resulted in the delivery of eight living children of twelve in which the fetus had reached a viable age. Excluding the one macerated, we have a saving of eight out of eleven children, or 72.7%. Craniotomy was required but once, and this is the only instance of this operation in the practice of the Philadelphia Lying-in Charity, so far as I know, during the last five years.

With version in contracted pelvis I have had no experience. The operation under favorable conditions can, however, be done so easily that it may be regarded as without danger in itself. The dangers attending it are such as are inherent to head-last labors. I will cite a case in illustration in my own experience, with a brief reference to a few which I accidentally came across in print.

CASE VI.—Contracted pelvis. Breech presented. Third pregnancy.

Mrs. B., American, age 35. She was of average height and had no apparent deformity. The first child was still-born after a very prolonged labor. In the delivery of the second, forceps were used, and the child lived. The third labor came on at full time, July 5th, 1885. I was called in when the dilatation was well advanced, and several hours after the membranes had ruptured.

The breech presented. Extraction of the head was very difficult. The child was a male of average size and still. On expressing the placenta, a tympanitic distention of the abdomen was observed. The patient expressed herself as feeling very comfortable. The frequency of the pulse was slightly accelerated, but, as the uterus was well contracted, the patient was soon left. During the night she began to suffer extremely, and on the following day there were symptoms of internal hemorrhage and peritonitis. She died twenty-four hours after delivery. Rupture of the uterus and vagina with intra-peritoneal hemorrhage was found on autopsy made by Dr. Formad.

In an excellent paper on the "Treatment of Labor Delayed by Obstruction at the Pelvic Brim," by Samuel Sloan, M.D.,¹ in the *Edinburgh Medical Journal*, January, 1886, two instances of extensive laceration, one of them fatal, are cited. They were breech presentations in contracted pelvis. The first of

¹ Also N. Y. Medical Abstract, January, 1886.

these cases had been delivered of a large child by axis-traction forceps, the vertex presenting, the child still-born. The mother made a good recovery. During the following year, labor was induced at seven and three-quarter months; footling presentation; great difficulty with extraction of head; child still-born; weighed four pounds six ounces; hemorrhage from laceration of cervix; pulse rose to 180.

The second case was delivered at full term, footling and funis presenting, head detained four minutes at the brim, child alive; cervix torn at both sides; woman died.

Hofmeier¹ reports an instance of perforation into Douglas' pouch and death soon after delivery in a flattened pelvis (pelvis spinosa). Premature labor was induced at the thirty-sixth week, with version and extraction. The true conj. in the dried pelvis measured 7.6 cm.

There are several conditions favoring laceration under these circumstances. The one to which I desire first to call attention has, as far as I am aware, been overlooked. In head-first delivery, the cervix, as a rule, is drawn up over the presenting part of the child: but in presentations of the pelvic extremity, the cervix, with the lower segment of the uterus, is drawn and pressed down into the pelvis in such a way as to be subjected to injurious and dangerous compression between the bony pelvis and the child's head. This danger is greatly enhanced if, in addition to contraction, there be a pelvis spinosa, as in Hofmeier's case. The other condition is the well-recognized fact that in presentations of the breech the child's life is endangered so soon as compression is made on the cord, and for this reason the delivery must be hastened as soon as the hips are born. As they are compressible, and as their circumference is on an average several inches less than the suboccipito-frontal, we have rapid delivery through an imperfectly dilated os. For these reasons I believe it will be best to restrict the operation of version to cases in which there are other reasons for it than the mere existence of flattening. Some of these are the presence of the occiput on the smaller side of an unequally contracted pelvis, the sagittal suture over the symphysis pubis, presentation of an ear, and, finally, prolapse of the cord.

The importance of careful internal and external examination

¹ AMERICAN JOURNAL OF OBSTETRICS, vol. xvii., p. 1,293.

as early as possible in labor cannot be over-estimated; unfavorable positions may thus be recognized, and successful efforts made to correct them by manipulation or by postural treatment.

The use of axis-traction forceps is of immense advantage in this class of cases. With instruments appropriately constructed, the objections urged against the occipito-frontal application when the head is at the brim disappear. There is no increase of the bi-temporal and bi-parietal diameters, as compression in the occipito-frontal diameter is too slight to occasion any compensatory increase.

The instrument which I employed in the two cases of more marked narrowing has the cephalic and pelvic curves of the Davis' forceps; the blades have the same general outline, but are heavier and the fenestræ are smaller. They are without the Tarnier curve, which is also omitted in Tarnier's last modification. By the use of these forceps, traction is made as nearly as possible in the direction of least resistance, and without interfering with the usual mechanism of delivery. The advantage of having the head in a position of demi-flexion until it has passed the contracted brim is decided; for in this way the longer bi-parietal diameter corresponds to the lateral conjugate, and the bi-temporal is brought into relation with the true conjugate. The ease of delivery stands in marked contrast with the difficulties and delays incident to the use of the ordinary forceps. The oblique application of Hodge¹ is a particularly difficult and tedious operation.

As evidence of the safety of high forceps operation, I desire to state that I have used the forceps in the uterus with the head at the brim of the pelvis fifteen times, in addition to the cases recorded in this paper. Out of this number, two of the children were stillborn and one mother died on the third day after delivery. Her death was not due to the use of the forceps.

I am not able to state the exact number of cases in which the disproportion between the head and the pelvis was very marked, and refer to them merely to illustrate the point, that the forceps may be used with safety and advantage when the head is arrested at the brim of the pelvis.

A word in regard to the estimation of the true conjugate diameter of the pelvis. If the rule given by the older authori-

¹ "A System of Obstetrics," p. 401.

ties, as Hodge, of deducting uniformly a half-inch from the diagonal conjugate in order to obtain the obstetrical conjugate be followed, this diameter will be constantly over-estimated. Measurement of a number of models of rachitic pelvis in the Mütter Museum shows a difference of one inch. In the rachitic pelvis I have, however, deducted but three-quarters of an inch from the diagonal conjugate in estimating the true.

I had intended to include the history of two cases of generally contracted pelvis in this paper, but will not do so at this time. One was a generally contracted flat pelvis, and in the other the transverse diameters were shortened out of proportion to the antero-posterior. It approached the type of malacosteon. Both women were delivered of living children, one by forceps, and the other naturally on the induction of premature labor. Excluding a case of generally contracted rachitic pelvis—conjugate two inches—in which Cesarean section should have been done, these are the only cases that have come under my care.

I desire, in conclusion, to add the following propositions:

In the flat pelvis and in the flat rachitic pelvis, decided degrees of disproportion at the brim may be overcome by the natural efforts when the head presents.

In the forceps, and especially in the axis-traction forceps, we have the means of extending still farther the possibilities of successful delivery when the head is arrested at the brim.

The forceps used judiciously is a safe instrument for mother and child.

The existence of contraction of the pelvis, in itself, is no reason for preferring version.

In flat pelvis with a conjugate diameter of not more than $3\frac{1}{4}$ inches and not less than $2\frac{3}{4}$ inches, premature labor should be induced.

ON THE RESULTS OF UNILATERAL REMOVAL OF THE
UTERINE APPENDAGES.

BYLAWSON TAIT, F.R.C.S., M.D., etc.

IN previous publications, I have had repeated occasions to point out that under the term "removal of the uterine appendages," in order to keep a clear logical notion of the actual details of the proceedings, it is essential to make such subdivisions as are necessary to indicate the purpose for which the operation is undertaken.

One writer has maintained that operations should not be classified on any other grounds than their mere anatomical relations, and that the intentions and purposes of the operation should not enter into the element of classification at all. This, of course, is a conclusion which will not bear investigation for a moment, for we are at once met by the difficulty that it would be impossible to recognize any distinction between the operation for the induction of premature labor and the crime of abortion mongery unless we have the intentions and purposes of the operations clearly in mind. Not only so, but in the case of an amputation at the lower third of the thigh for a smashed knee-joint there are precisely the same anatomical relations as when the operation is done at the same point for chronic inflammatory diseases; but it has long since been the practice to separate in statistical tables primary amputations from those of a secondary character. We have, therefore, many points to take into consideration besides mere anatomical details in the classification of operations. This is strikingly the case in the operations for removal of the uterine appendages, where we have a clear and precise division at once rendered necessary by the fact, that in certain groups of cases it is absolutely essential to remove the appendages on both sides.

Thus, if we operate for the arrest of the hemorrhage of a myoma, or for the purpose of reducing its size, it would be perfectly futile to remove the appendages on one side only, unless those of the other side were already absent. So if we desire to

prevent impregnation in such rare cases of deformity as I think justify the removal of the uterine appendages, in order that risk of life may not be incurred, both sides of the uterus would have to be rendered sterile.

On the other hand, actuated by the sound principle that no organ should be removed which is not diseased, in all the cases of the varieties of chronic inflammatory mischief in the uterine appendages which have come under my care I have not in a single instance removed the second set of appendages when they have been ascertained to be healthy. At first sight it would appear as if there is no need for interfering with the second side when only one side is diseased, whether this disease be characterized by occlusion and distention of the tube or by dense adhesions, which render the functions of the organ impossible and give rise to such intolerable suffering as to make life a burden. But first-sight conclusions and a priori arguments are often found upon larger experience and more careful research to be fallacious. And I greatly fear that the conclusions which I have arrived at on this point, and upon which I have up to the present moment acted, are not likely to bear the test of careful investigation. I have been made painfully familiar with the frequency with which operations of this kind have proved absolutely useless for the purposes of the operation, and where the disease has recurred on the other side and demanded a second surgical interference.

The time has, therefore, come when I should put on record the evidence in my possession, and leave for the judgment of my professional brethren a question which is certainly novel and startling. The question is, whether it would not be better to advise the complete removal of the uterine appendages in any case where an operation is demanded by the presence of serious disease on one side only.

As the first contribution to the solution of this important problem, I have submitted the histories of all the cases of unilateral removal of the uterine appendages on account of chronic inflammatory disease operated upon by myself up to the 9th of December, 1884, at which time I completed my first series of 1,000 cases of abdominal section. The reasons for this selection are, I think, sufficient; the strongest of them being that the time which has elapsed from then till now gives me a fair

period, though by no means a complete one, at the conclusion of which to give the after-histories of the patients.

It will be seen, from what I have to say of some of these cases, that the *complete* results will probably not be evident for two or three years to come, and by that time the evidence will be stronger, I believe, in the direction which is clearly indicated at the present moment, that, if we have to remove one set of appendages for chronic inflammatory disease, it will be far better to remove them both.

The cases are 27 in number, and as the operation proved fatal in one of these cases, the inquiry is limited to 26. This group may be subdivided as follows :

	Cases.
Abscess of ovary,	1
Chronic ovaritis with adhesion,	2
Hemato-salpinx,	4
Hydro-salpinx,	4
Pyo-salpinx,	15

These 26 cases form, curiously enough, as nearly as possible, one-fourth of all the cases that I operated upon during the period of 1,000 cases for chronic inflammatory disease of the uterine appendages. But the relations which this group of 26 cases have to the general relations of the total cases of this kind operated upon indicate very remarkable conclusions.

Thus pyo-salpinx is unilateral relatively to hydro-salpinx as about 7 is to 4, hydro-salpinx is unilateral relatively to hemato-salpinx as about 4 is to 1, and hydro-salpinx is relatively frequent to chronic ovaritis with adhesions as 8 is to 1. Without being exactly cognizant of what these relations might prove to be on careful examination, I was abundantly aware that the commonest cases of pelvic suffering amongst women, matting of the pelvic contents, or gluing of the ovaries and tubes to all the other organs, with the occlusion of the tube and its distention, either by serum or pus, were almost uniformly bilateral.

I was also perfectly aware of the fact that hydro-salpinx was almost uniformly symmetrical, but I have been profoundly struck with the curious fact that we may find a large pyo-salpinx densely adherent with its corresponding ovary to other organs on one side and a perfectly healthy set of appendages on the other; and it was the frequent recurrence of second operations in this class of cases which struck me so forcibly as

to lead me into this special research, the more so as it was also in this group that I met with cases of death from neglect of second operations. And we now know that pyo-salpinx has a lethal significance far more serious and extensive than any of us could have dreamt of in the beginning of this kind of practice some seven or eight years ago.

On the contrary, whilst I cannot say that I am free from suspicion that hydro-salpinx is occasionally fatal, I cannot be very well brought to believe that its risks are great, and I do not think that we could imagine chronic ovaritis with adhesions having a fatal result. But the curious thing is, that over the whole group of these diseases the amount of suffering is not in proportion, but directly the reverse, to the risk of life which is run. I have over and over again removed large rotten Fallopian tubes distended with eight or ten ounces of pus when there has been hardly any pain at all, and where the symptoms have been almost entirely confined to mere general constitutional disturbance.

Only a fortnight ago I removed from the wife of a medical practitioner in this town a huge unilateral pyo-salpinx just on the point of bursting, and which undoubtedly had not existed more than twelve or fourteen days. With equal certainty, this pyo-salpinx would have burst and killed the patient within a week, and yet that patient had no pelvic pain from the beginning of her illness to the end of it. I had the utmost difficulty in persuading her husband to permit me to perform the necessary operation, but when it came to be performed in his own presence, nothing could exceed his expressions of gratitude for the successful firmness with which I pressed the interference which was urgently demanded.

CASE I.—Suffered from intense pelvic pain for many months, tender mass on left side of uterus. I opened the abdomen on August 14th, and removed an adherent ovary, containing a suppurating cavity, from the left side. The patient recovered and went home Sept. 1st. Three months after, had a miscarriage at three months, immediately after became pregnant and had another miscarriage at four months. Menstruation extremely irregular, sometimes with intervals of only seven days and sometimes of seven weeks, with profuse metrorrhagia for which she has had repeatedly to call in medical attendance. Has suffered a good deal of pain, looks anemic, tender mass on right side of uterus. I have not the slightest doubt the appendages on the right side are affected and will require in a short time to be removed.

The following cases of unilateral chronic ovaritis with adhesion stand alone in my experience, and certainly their history present quite a unique category of details.

CASE II.—In the beginning of 1884, I was consulted by a lady placed under my care by Dr. Howitt, of Nottingham, with a remarkable group of somewhat anomalous symptoms. She had been under the care of a number of practitioners and a great variety of treatments had been adopted for the relief of these symptoms, but no satisfactory results had been arrived at. Many of the symptoms were clearly of a reflex character, but could not be brought within any known category of disease in the opinion of those under whose care she had been. Amongst these symptoms there was a curious tendency for the extensor muscles of the thighs to give way and the patient to fall forwards whilst walking. She had much pelvic pain, profuse menstruation, the menstruation at that time being accompanied by a good deal of pain. On examination, what had appeared to be a retroflected and adherent uterus was at once discovered, and this had already been treated by pessaries; but a more careful examination disclosed this to be an adherent and prolapsed ovary. As my opinion on the case was sought almost as a last resort, I suggested that it was perfectly possible that this diseased ovary might be the cause of all the reflex symptoms, and after very careful discussion and consultation, it was decided to remove it. The operation was performed on February 8th, and the ovary turned out to be the left adherent down in the cul-de-sac behind the uterus; its removal was not very difficult, and the patient made a very easy recovery and for some time was a good deal better. Menstruation was of course not at all interfered with, but it became less profuse and less painful after the operation.

One year after the operation, she was not very much better, and was placed under the care of Dr. Dyce Browne. In October, 1884, Dr. Howitt wrote me to the effect that "there was still a good deal of pelvic disturbance, and the uterus now seemed to have fallen backwards into the spot where the ovary had been extracted and there become adherent." Dr. Dyce Browne's opinion was that the disease was essentially spinal, an opinion which had not been shared by any one else. She remained under his care for some time, and he wrote to me to the effect that "there could be no doubt, from the patient's description, that the operation had benefited the pelvic condition and that the inflammatory mischief which had been found to exist would probably account for the increased menstrual pain and its disappearance after the operation; but that so far as the nervous symptoms were concerned, she had not been benefited in any way." He was not of opinion that removal of the other ovary would benefit her in the least, and therefore the matter was not discussed any further.

The treatment, however, to which she was subjected with a view to the case being a spinal one, I gather from the patient

was not any more satisfactory than any other of the numerous treatments which had been adopted. I have heard from her within the last few days, and in the letter she says: "When I saw Dr. Dyce Browne I had really begun to improve three months before. I have gone on gradually improving ever since, but I do not know how much I owe to his treatment. Since October, that is for the last two months, I have been gaining strength, I think, just as surely. I can now walk a mile. I suffer a little when tired, and if too tired I fail to lift my legs clearly off the ground; my back is tender in the old place, but I have not nearly so much backache and I can sit for hours. My nerves are much stronger. I am not right by any means, but a great deal better and aiming for still more improvement." I ought to have said that this painful spot was in the middle of the sacrum.

In this case I am disposed still to believe that the reflex disturbance existed in the uterine appendages, and if I had removed both of the ovaries and completely arrested menstruation I might have cured this patient. As it is, there can be no doubt that the operation has been a failure so far, but if complete relief does take place within another year, or even two, I think I may be as fairly entitled to claim the relief as due to the operation as certainly any other form of treatment to which this patient has been subjected.

This case stands alone in my experience, for I have always been extremely chary in interfering with cases in which there was a large nerve element, and the lesson of this case is not a very encouraging one to proceed in this direction. I was, however, justified in my own mind in operating, and I had the permission of those who were concerned in the case with me to operate, by reason of the clear indications that there were in the pelvis of chronic inflammatory trouble. If I had, however, to deal with a similar case to this again, I certainly should not for a moment advocate anything short of removal of the uterine appendages completely. I have not seen the patient since she left after the operation, but from Dr. Howitt's letter I am strongly inclined to believe that what is regarded as a retroflexed uterus is the right ovary prolapsed and adherent in pretty much the same position as the left originally was.

CASE III.—In May, 1884, I was asked by Drs. Whitby and Eardley Wilmot, of Leamington, to see a lady aged 25 who began to menstruate at 14 years of age; the function was normal and painless for about two years, but soon after she was 16 she began to suffer pain; this has been constantly increasing ever since, and

of late years the pain has attacked her between the periods as well. During the last two years, she has suffered intensely from pain, and shortly after her marriage was obliged to give up married life and separate from her husband. The pain is chiefly confined to the left side running down the left leg, and for this she has been treated by a number of physicians in London and elsewhere. Dr. Wilmot, in the record of the case, said : "She had undergone every kind of palliative treatment, counter-irritants, blisters, leeches, prolonged rest, and treatment by bromide of potash and morphia, and every kind of drug apparently had been used, suitable and unsuitable, and for protracted periods. Every kind of pessary had also been employed, and the cervical canal divided and dilated in the hands of a competent gynecologist, but not the slightest relief was obtained from any treatment." I saw her on May 20th, and found the uterine canal perfectly open and no stricture. To the left of the uterus the left ovary could be felt distinctly enlarged and quite adherent ; the slightest touch upon it gave great pain. The right ovary could not be felt, and pressure on the right side of the uterus gave no pain at all. My diagnosis was chronic inflammation of the left ovary and tube with adhesion, and I advised their removal. After prolonged discussion and consultation, this proposal was agreed to, the patient laying special emphasis upon her desire that the right ovary, if found to be healthy, should not be removed ; and to this condition I gave a ready assent. I opened the abdomen on May 27th, Drs. Whitby and Eardley Wilmot being present, and found the left ovary densely adherent below and behind the uterus. The adhesions bled so freely as to necessitate the use of a drainage-tube. The right ovary was brought to the surface without the slightest difficulty, examined, and found with its corresponding tube to be perfectly healthy ; it was therefore returned. The patient made an easy and rapid recovery, and went on perfectly well until the middle of July, when Dr. Wilmot wrote me that she was beginning to have some of her old symptoms, the temperature and pulse rising specially at night, loss of appetite, great pains on right side, and vomiting. The pain became so great that Dr. Wilmot had to employ subcutaneous injections of morphia. He wrote on June 25th to say that on making a vaginal examination that morning there was clearly a mass to the right of the uterus, very tender, and fixing the uterus ; it could be felt between two hands bimanually. She complained of pain on pressure on this spot, and it seemed to him that there was some cellulitis, or possibly a collection of matter, or perhaps some blood-clot suppurating, and that the hectic symptoms were due to this. I immediately went over to Leamington to see the patient and found matters exactly as Dr. Wilmot described, and I came to the conclusion that the right ovary, which had not been removed, was undergoing inflammatory change. I found a distinct mass on the right side of the uterus, very tender on pressure, and quite fixed. On the left

side everything was perfectly satisfactory, the uterus was quite movable in that direction, and when the finger was pressed on that side of the uterus no pain was experienced at all. I advised the patient to go to Kreuznach for three months, but she absolutely declined to do anything of the kind, and insisted upon the right ovary being removed at once, a proposal to which I certainly could not offer any reasonable objections, because she did not mend a bit, and the operation was performed on July 13th. The first incision was opened, but was extended downwards about one-third of an inch on account of the cartilaginous nature of the cicatrix. The left stump was quite shrivelled and free from adhesions, no traces of the ligature could be found by the fingers. The right ovary was large, soft, and adherent, more extensively adherent even than the left had been, but the adhesions were overcome more easily on account of their recent origin, and they did not bleed, so that no drainage-tube was used. The patient made again an easy and rapid recovery. I heard from her in August, 1885, to the effect that she had not menstruated, but that her condition was far from satisfactory, although she was more free from pain than she had been. She had suffered considerably from sciatica and various neuralgic conditions, but at the end of last December she had improved very considerably, and I have every belief that in the course of another year or two she will be perfectly well.

CASE IV.—Had suffered many years from profuse loss and pelvic pain. A large mass on the left side of the uterus fixing the organs together could be felt. I opened the abdomen October 11th and removed from the left side a distended tube containing broken-down blood-clot. She recovered and went home November 29th. This patient still suffers, and in all probability will require a second operation.

CASE V.—Menstruation began at 13; no pain, scanty; married two years; two children, one living seven months old. Since confinement, has been under treatment for four months, and latterly has suffered intense pelvic pain, the pain extending all over the abdomen. Dr. Price asked me to see the patient on December 14th, 1883, as he considered she was suffering from retroversion, but her sufferings were so great that he had given up all attempts to replace what he regarded as a retroverted fundus. I recognized it as a distended tube adherent behind the uterus, and advised an abdominal section, which I performed on December 19th, and removed the left tube densely adherent and distended with broken-down blood-clot. She recovered and went home January 5th. She has changed her address and cannot be traced, so that what her subsequent history may be I cannot say.

CASE VI.—Menstruation began at 18, remained regular till her marriage at 28, though she had a miscarriage ten months before I saw her, at which time she had a serious flooding, and

these floodings were repeated at intervals until the operation. Since January she had been in great pain on the left side, and was confined to bed for three weeks in March and again in April for two weeks. She lost profusely during the whole of May and June, and was in great pain all the time, so much so that she could not walk. I saw her for the first time in July, 1884, and found a large mass on the left side of the uterus, the whole of the contents of the pelvis being fixed. I opened the abdomen, Dr. Vander Veer, of Albany, being present, and found a left hema-to-salpinx, the appendages on that side being removed. Dr. Vander Veer took away the specimen with him. She was free from pain after the operation for about six months, and then began to suffer on the right side precisely as she had suffered on the left, and it got worse with increasing menstruation, so that in October, 1886, she was bleeding as profusely as she was before the first operation, with intense pain. I found a mass on the right side, just as there had been on the left on the previous occasion, and on the 16th of October, 1886, in the presence of Dr. Audley Buller, of London, and Dr. Lawson, of West Bromwich, I opened the abdomen and removed the right tube and ovary, the tube being occluded and distended with serum and densely adherent everywhere. The stump on the left side was perfectly satisfactory, there being no adhesions there. She made an easy recovery, and returned home on October 30th. This patient never had any children either before or after the first operation.

CASE VII.—Married twelve years; one child 11 years old. She suffered from complete dyspareunia. Operated on October 29th, 1884, and removed the left appendages; the right being perfectly healthy were not interfered with. She made an easy recovery, and returned home November 21st. I saw her a few days ago, and found that she had menstruated regularly since operation, but less profusely than before, and with very little pain. A large, fluctuating and somewhat tender mass can be felt on the right side of the uterus, which is there quite fixed. Intercourse can be endured, but within the last few months it has begun to give her pain on the right side. The condition on the left side is quite normal, and she feels in perfect health. She will probably require a second operation.

CASE VIII.—Married at 16, and lived with her husband three years, whom she divorced in 1877 on account of his having communicated gonorrhea to her, and this was followed by an attack of pelvic peritonitis. After that menstruation became very scanty and increasingly painful. I discovered a small retro-uterine tumor in 1877. It was intensely painful, and had been diagnosed previously as a dermoid tumor. The menstrual pain became increasingly severe, and was remarkable in its coming on two or three days before the period. I advised her to have the tumor removed, and found it to be a very large hydro-salpinx of the right tube. I removed it with its corresponding ovary. The

patient made a very easy recovery. Soon after the operation she married for the second time. She has continued ever since to menstruate regularly in a very scanty way with a great deal of pain, and has never become pregnant. Her health, however, is greatly improved, and she is able to get about and drive freely, but during the menstrual week she is greatly invalided.

CASE IX.—Menstruation began at 14, always regular, free from pain. Married at 20. Six months after she fell down a flight of stairs when she was three months pregnant, and this brought on a miscarriage. She was very ill for twelve months after. She had gone on suffering very severely from symptoms indicative of perimetritis for thirteen years, having been treated in various hospitals, and worn a large number of instruments without any kind of relief. I discovered the seat of the pain to be a tumor behind the uterus and to the left. The pain was more or less constant, but became violently paroxysmal just before and during the whole of the periods, which were regular and very profuse. On April 3d, 1880, I removed the tumor, which was a distended Fallopian tube on the left side full of pus and very adherent. The patient made an easy recovery, and left the hospital on the 20th. I have seen her from time to time. She menstruates quite regularly, has never become pregnant, and suffers considerably at her periods still.

CASE X.—Had had one confinement about twenty years ago, and had suffered very much from dysmenorrheal pain ever since. Came under my care some seven or eight years ago with what I believed to be retroflexion, and for this I treated her in the usual way by pessaries, but without any very great relief. She came back to me in 1882 much worse, and I then found that what I had previously regarded as a retroverted fundus was an occluded and distended tube on the right side. I warned her that I thought it might be advisable to perform an operation for her relief, but she expressed great reluctance to undergo anything of the kind. At the end of September of the same year I was called to see her, suffering from an attack of pelvic peritonitis which was completely focussed in this tumor. I therefore advised its immediate removal, and after consultation with Sir James Sawyer this was decided upon and at once carried out. The tumor was found to be the right Fallopian tube distended with serum. The patient made an easy recovery and has suffered much less ever since. She has married a second time, but has not become pregnant.

CASE XI.—On examination, I found a pelvic mass fixed behind the uterus. I operated on May 8th, 1884, and removed the left tube adherent and distended with serum along with its corresponding ovary. The patient made an easy recovery and left on May 26th. The appendages on the right side were healthy and therefore not removed. She returned to me with all her old symptoms in August 1885, and on the 15th of that month I

opened the abdomen for the second time, removing the right tube occluded and distended with pus, with its corresponding ovary. She made an easy recovery and returned home on September 5th, 1885.

CASE XII.—This patient had spent some years of her life on the town. She suffered intense pain at her menstrual periods, which were irregular and very profuse. A large fixed mass could be felt on the left side of the uterus fluctuating. I opened the abdomen on March 28th, 1881, with the intention of removing the Fallopian tube, but found I could not do so on account of the adhesions. I opened it and drained it. She left the hospital on April 29th with the wound unclosed. I saw her from time to time. The wound never did close, but continued to discharge large quantities of offensive pus, and on February 2d, 1882, I again opened the abdomen on account of her continued suffering and the exhaustion induced by the persistent discharge. I was at this second operation able to remove the suppurating cyst. About a year after this I saw this patient again and found conclusive evidence that the tube on the opposite side was suppurating, but I could not induce her to submit to a third operation and she died some weeks after in great suffering, probably from rupture with peritonitis.

CASE XIII.—Married eighteen years; seven children, eldest 17, youngest 4 months. Soon after last confinement had severe attacks of inflammation on left side, which lasted thirteen weeks, every three or four weeks the abdomen enlarged greatly and then she had severe attacks of pain lasting several days, then the swelling subsided. The abdomen has been steadily increasing in size for the last four years; periods are regular with very great loss and great pain, though at times there is no pain, the pain preceding the loss. The information given to me by her medical attendant, Dr. Sharpe, was that "six weeks ago she had a severe attack of peritonitis from which she very nearly died. I saw her for the first time in February, 1879, and this attack of peritonitis was in September, 1881." I diagnosed pyo-salpinx on the right side with repeated ruptures. I operated on October 7th, 1881, found my diagnosis correct, and removed the right tube containing several ounces of pus; the adhesions were such as to show that the peritonitis had either been very frequently repeated or had been very extensive. The left tube and ovary were regarded as so healthy as not to require removal. She made an easy recovery and left the hospital on February 6th. The subsequent history of this patient is that she died of an attack of peritonitis about three years after the operation, and from the story told I have no doubt that it arose from a pyo-salpinx in the left tube. She had no children after the operation.

CASE XIV.—First period at the age of 13; she got a profuse chill three months before I saw her and had been in bed ever since with profuse metrorrhagia. Her pelvis was quite

blocked up with effusion and no diagnosis could be made. I opened the abdomen on December 20th, 1882, and found a large double pyo-salpinx both of which seemed to me to be too densely adherent for removal. I opened them, cleaned them out, and drained them from below. The patient left the hospital on March 22d after a very tedious convalescence, with the abdominal wound healed, but large quantities of pus discharging from the vagina. I saw her at intervals for some months, but she steadily went down hill and died of exhaustion.

CASE XV.—Had been married three years, had never been pregnant, menstruated regularly, lasting three or four days, until marriage. Since then she had seen hardly anything to speak of, and her general health had been very bad during the last eighteen months. She suffered intense pain at the periods and suffered from dyspareunia. A large mass could be felt fixed behind and to the left of the uterus; it was diagnosed as a pyo-salpinx. This was removed on August 17th, 1882, in the presence of Dr. Stansbury Sutton and Sir William Miller. The right appendages were left untouched. The patient left the hospital on September 21st. The subsequent history of this patient is not known, as she has changed her address and cannot be traced.

CASE XVI.—Wife of a medical practitioner. I was summoned to see her in October, 1882. She had had seven children, and had led a very active life. She suffered early in the spring of 1882 from an attack of acute pelvic pain which kept her in bed for several days. She got up, and in about a fortnight the pelvic pain returned, and from that time she remained in bed for about two months. Several practitioners examined her and she was pronounced to be suffering from retroversion. The acute symptoms passed off, but she still suffered from great pain and profuse and frequent menstruation. The pessaries that were employed for her relief made her much worse. A recurrence of the inflammatory symptoms in the early part of October caused my being summoned to her, and I pronounced the retroverted fundus to be a pyo-salpinx of the left tube. I opened the abdomen October 15th and removed the tube which I had previously recognized with its corresponding ovary. She was completely convalescent on November 10th. Early in September, 1883, she was confined of a still-born child, the labor being a perfectly easy one, and there being no difficulties from the operation. A few days ago, I received the following letter from her husband:

LONGTON, Jan. 3d, 1887.

MY DEAR SIR:—I am very pleased to be able to say that my wife has been very well since the operation. She has had two children and is expecting another the end of this month. The only fault I can find with the operation is that both ovaries were not removed. She has never had a bad symptom.

CASE XVII.—I was summoned to her on account of what Dr. Pike had diagnosed as acute suppurative peritonitis, probably

arising from a ruptured pyo-salpinx—a diagnosis which proved to be perfectly correct when I opened the abdomen, as I did, without delay, on November 8th, 1882. The cavity of the pelvis was occupied by lymph and seemed to be the source of the peritonitis; all the organs were matted together. The right Fallopian tube was occluded and distended, and the ovary of a deep purple color, intensely congested and very friable; left tube and ovary seemed healthy and were therefore not removed. I published this case in detail, on account of very interesting details concerning it which do not affect the present issue. I saw this patient in 1883 in perfect health, and for some time she earned her living as a governess. I heard nothing more of her until I wrote to Dr. Pike, in December last, for the purposes of the present paper, asking for the subsequent history, and he replied in the following letter:

Dec. 24th, 1886.

MY DEAR TAIT:—Miss C. died some two years ago, and I have never ceased to regret that both sets of appendages were not removed at the time of operation. She went away into Devonshire, and when there, so far as I can get the history, she was seized in the same way as when you saw her, and died in forty-eight to sixty hours from, it was stated, acute peritonitis. In fact, I have no doubt the other appendages became diseased, and if she had been here, I have no doubt you would have relieved her. Never again will I consent to only one set of appendages being removed under similar circumstances.

CASE XVIII.—Menstruation began at 15, regular and very painful; married at 24; had three children, youngest 4 years. Had never had good health since marriage, and had got thinner; had a pelvic abscess dealt with in one of the hospitals in June, 1882; had a fever, which was said to be typhoid, in July, and had been in bed ever since. Menstruation became very profuse the last few months, and intensely painful, the worst part of the pain being the day before the appearance of the period. I found the contents of the pelvis all matted together, so that it was perfectly impossible to make any diagnosis. I decided to open the abdomen, and did so on November 22d, and found a pyo-salpinx on the right side. I removed the tube with its corresponding ovary. The patient made an easy recovery and left on December 10th perfectly well. She has been very well since operation, been quite regular and free from pain, “could scarcely have believed she should ever be as well as she has been.” Has had no child or miscarriage. Never had any kind of sexual enjoyment. For several months before operation, she could not endure intercourse; now can endure it, but does not feel well for a day or two after. On the right side the pelvis is quite free, but on the left of the uterus there is a large fixed mass, so that, though there are no symptoms, I am quite sure the disease has returned on the left side.

CASE XIX.—Menstruation regular, profuse, and intensely

painful last few months, pain coming on before the period two or three days; has lost flesh, and unable to do her work during the last twelve months. She admitted the possibility of having had an attack of gonorrhea, and afterwards declared that she had been privately married. A large tumor on the left side of the uterus was found, and therefore I admitted her into hospital, and opened the abdomen April 3d, 1883. I removed a densely adherent Fallopian tube from the left side, with its corresponding ovary. The right appendages were not removed. This patient menstruates regularly without any pain. She has had one child since the operation.

CASE XX.—Had been married about a year, suffered intense pelvic pain, abundant and painful menstruation, contents of pelvis all matted together. I diagnosed pyo-salpinx on the right side. I opened the abdomen on July 26th, 1883, and removed the right tube full of pus with its corresponding ovary. The patient made an easy recovery and went home August 25th. On May 14th, 1885, she was found to be menstruating regularly, but since the operation had not had much pain till the last period, there was a tender lump on the left side, is able to endure intercourse, diagnosis of pyo-salpinx on the left side, but she decided to wait for operation until she was worse. I saw this patient January 10th of this year, she menstruates once a fortnight three to six days, fearful bearing-down pains on left side, occasional pain on intercourse. About once a fortnight she has a profuse yellowish discharge, about half a teacupful of pure pus, feels much easier after this has passed. Looks well, general health fairly good. A large tender mass can be felt on the left side of the uterus, just as in May last. She has almost determined on another operation.

CASE XXI.—Menstruation began at 13 years of age, scanty, lasting only three days, but not painful. Had fairly good health up till marriage, twelve months ago. Had a lingering confinement and had not felt well since. A large mass on the right side of the uterus could be felt fixing the organs. I opened the abdomen on August 29th, 1883, and removed an adherent tube occluded and distended with pus with its corresponding ovary from the right side. The patient recovered and went home September 15th. She had a child eighteen months after the operation, has got quite well, menstruates regularly, no pain, and is quite strong.

CASE XXII.—I was summoned to see this patient in an emergency on the evening of January 28th, 1884, and found her suffering from acute pelvic peritonitis. I opened the abdomen next day and removed with considerable difficulty a pyo-salpinx of the left tube. The appendages on the right side were perfectly healthy, and therefore not removed. She made an easy and rapid recovery, and left the hospital on March 3d. I have seen her frequently since, as she conducts in a very energetic manner a

wholesale business involving very hard work. She has never menstruated since the operation, and has continued in robust health ever since.

CASE XXIII.—I operated on this patient on April 7th, 1884, removing a pyo-salpinx of the left tube with the corresponding ovary. I saw her August 6th, 1883, but she menstruated profusely every fortnight with a great deal of pain. I saw her again on the 11th of January of this year, and she tells me that the profuse, painful, and too frequent menstruation from which she suffered when I last saw her went on until six months ago with persistent pain on the right side, which began very soon after the operation, and has only ceased during the last six months, during which time the periods have become monthly and have diminished to five days in duration. The appendages on the right side can now be felt as large as an orange and quite fixed; it requires very heavy pressure on them to give rise to much pain, so that they are probably quiescent, but ready at any time to give fresh trouble. There can be no doubt that she had a severe inflammatory attack in the right uterine appendages within a few weeks of the first operation, and that my leaving them was a mistake. They are, of course, useless, and in all probability will require a future operation. This patient has never had any children, either before the operation or after it.

CASE XXIV.—Menstruation began at 15, painful and scanty; married two years; two children born dead, last confinement three months before I saw her; had suffered ever since. I operated on her on March 17th, 1884, and found a large pyo-salpinx of the left tube, which was removed with its corresponding ovary. She made an easy recovery and left the hospital on May 8th. This patient is said to have had another abscess form about four months after the removal of the first, and she died from peritonitis due to its rupture on July 1st.

CASE XXV.—Had suffered from acute pelvic symptoms for some weeks. I saw her in consultation with Dr. Taylor on July 5th, 1884, and found the contents of the pelvis completely fixed, and a large mass bulging into the vagina on the right side of the uterus. The gravity of the symptoms was so great that we decided on opening the abdomen next morning. This I did and removed the Fallopian tube from the right side, distended with pus, with its corresponding ovary. The appendages on the left side were healthy, and therefore not removed. The patient made an easy recovery and went home on July 26th. What has become of her since I do not know, as she has changed her address and cannot be traced.

CASE XXVI.—Married four years; two children, last dead-born six months before I saw her. She had after this repeated attacks of peritonitis with some discharge from the uterus and vagina, for which she was in bed four months, and again in the

following April. When I saw her I found the contents of the pelvis completely fixed from below, and nothing could be determined exactly. The patient was so ill that I advised an abdominal section, which was performed upon the 12th October, 1884; the left tube being found to be enormously distended and full of pus, it was removed with its corresponding ovary. The appendages on the right side being regarded as perfectly healthy, were not removed. She recovered and left the hospital November 3d. She came back to me in February, 1885, with many of her old symptoms, and I would have performed another abdominal section on her had it not been that she was an extremely unsatisfactory patient, and really behaved so badly that I had to dismiss her summarily from the hospital. What has become of her I do not know.

In analyzing the list to see in which direction light can be shed upon this interesting group, it is, first of all, to be noted that of the twenty-six women only four were single, and I happen to know that of these four two were not virgins. Of the twenty-two women who were married, nine only had children before being operated upon at all, and as they all had, with the exception of one, been married a number of years, this large disproportion of sterility—nearly forty-two per cent—has a very palpable significance. Of these twenty-two women, all, with one exception, so far as I know, maintained marital relations after the first operation, but in only three cases have they since become pregnant; that is, there has been a contingent fecundity of rather more than fourteen per cent.

Of the twenty-six, a second operation has already been required in one case of hydro-salpinx, one case of hemato-salpinx, and one case of chronic ovaritis. In the cases of pyo-salpinx, there are five of them already dead under such circumstances as make it absolutely certain that the other side had become diseased, ruptured, and gave origin to acute peritonitis. I know that this is the case in four of them, and Dr. Shelwell Pike gives fairly conclusive evidence that this was the case in the fifth.

From recent examination of eight of the cases in the list, I am perfectly satisfied that they are in such a condition as to warrant the belief that they will all require a second surgical interference. It will thus be seen that the unilateral operation has already been proved in thirteen out of twenty-six cases to be an absolute failure, and to have been successful in the sense that it has left the functions of the other side unimpaired, the disease not having there recurred in only three out of twenty-

six. It will be remembered that in one of these latter cases the husband and medical attendant of the patient strongly objects to this particular form of success.

I need only say, in conclusion, that from the earliest period of my engaging in this particular kind of work, I have steadily had in view the propriety of not removing organs which were not diseased. The confusion into which this kind of gynecological work has been thrown by the introduction of such unfortunate terms as "Battey's operation," "spaying," "normal ovariectomy," and "oöphorectomy" is very well illustrated in the group of cases now under consideration, and it justifies me in making another plea for the use of a term such as "removal of the uterine appendages," or any such other which will not involve either personal associations or theoretical conclusions, but will merely describe the actual conditions, so far as a term can do so, of the operations performed. To term these operations by the name of any particular person is, of course, ridiculous: to speak of the removal of a suppurating Fallopian tube as an oöphorectomy is nonsensical, and still more absurd would it be to speak of such an operation as a spaying or a castration.

All other methods of cataloguing these cases than the one I suggest are open to this initial difficulty, that cases in which the removal of the uterine appendages is undertaken group themselves from one point of view at once into two classes—those in which it is absolutely essential to remove the appendages on both sides, and those in which it may be possible to remove only the appendages of one side. Thus in the original proposal of Dr. Battey (to remove normal uterine appendages for the purpose of immediately bringing on the menopause and indirectly benefiting the patient thereby for more or less pertinent nerve symptoms) to remove one set of appendages only would be manifestly absurd. Equally absurd would it be to remove one set of appendages only for the arrest of hemorrhage in cases of myoma; but in cases of cystic diseases nobody has yet suggested, and I do not for one moment believe ever will suggest, the necessity of removing the appendages of the second side unless the ovary is clearly the seat of cystic degeneration. But here we come to a group in which the question has yet to be decided as to whether it is necessary or advisable to make the operation, of necessity, bilateral. So far as I know, the present contribution is the first and only evidence to be obtained on the

No.	NAME.	RESIDENCE.	MED. ATTENDANT.	Age or S.	M. DISEASE.	OPERATION.	DATE.	R.	REMARKS.
ABSCESS OF OVARY.									
1	C. P. Smethwich.....	Dr. Patent.....	25	S. R. side.,	Removal...	Aug. 14, 1883...	R	Will probably require second operation,	
CHRONIC OVARITIS WITH ADHESION.									
2	C. A. Nottingham.....	Dr. Howitt.....	30	S. L. side.,	Removal...	April 8, 1884...	R	May require second operation.	
3	L. Leamington.....	Dr. Eardley Wilnot...	20	M	"	May 27, 1884...	R	Second operation has been per- formed.	
HEMATO-SALPINX.									
4	S. B. Stafford.....	Dr. Cookson.....	40	M L. side.,	Removal ..	Nov. 1, 1883...	R	May require second operation.	
*5	H. B. Dudley Port.....	Dr. Price.....	30	M	"	Dec. 17, 1883...	R	Cannot be traced.	
6	G. K. West Bromwich.....	Dr. Lawson.....	30	M	"	July 12, 1884...	R	Second operation has been per- formed.	
*7	K. H. Smethwich.....	Dr. Pitt.....	31	M	"	Oct. 29, 1884...	R	Requires second operation.	
HYDRO-SALPINX.									
8	G. S. Birmingham.....	Mr. Watkin Williams...	28	M R. tube.	Removal ..	May 23, 1879...	R	Has never been pregnant, still suffers.	
9	G. W. ".....	L. T.	37	M L.	" Opened and drained..	April 3, 1880...	R	Has never become pregnant.	
*10	H. P. ".....	Sir James Sawyer...	39	M R.	" Removal ..	Sept. 27, 1882...	R	Has never become pregnant.	
11	E. B. ".....	Dr. Fugh.....	36	M L.	" " Removal...	May 8, 1884...	R	Second operation performed.	

No.	NAME.	RESIDENCE.	MED. ATTENDANT.	AGE OF S.	DISEASE.	OPERATION.	DATE.	R.	REMARKS.
PYO-SALPINX.									
12	M. F.	Birmingham	Mr. Greene	36	M. L. tube.	Opened and drained.	March 28, 1881.	R	Died for want of second operation.
*13	G. S.	Walsall	Dr. Sharpe	M R.	"	Opened and drained.	Oct. 7, 1881	R	Died for want of second operation.
14	L. W.	Birmingham	Mr. Newton	18	S. Double	Opened and drained.	Dec. 30, 1881	R	Died subsequently from incomplete operation.
15	G. B.	"	Mr. Briggs	27	M. L. tube.	Removal	Aug. 17, 1882.	R	Never been pregnant.
*16	A. A.	Longton	Mr. Ashwell	36	M. L.	"	Oct. 15, 1882.	R	Has had two children since, and is again pregnant.
17	H. C.	Malvern	Dr. Pike	19	S. R.	"	Nov. 7, 1882	R	Died for want of second operation.
*18	J. K.	Birmingham	Dr. Kenny	39	M. R.	"	Nov. 22, 1882.	R	Has not been pregnant, will probably require second operation.
19	G. G.	"	Dr. Welch	21	M. L.	"	April 3, 1883.	R	Has had one child since operation.
20	M. L.	"	Mr. Hallwright	20	M. R.	"	July 26, 1883.	R	Requires second operation.
*21	G. S.	"	Dr. Wilson	30	M. R.	"	Aug. 28, 1883.	R	Has had one child since.
22	G. M.	"	Mr. Mann	36	M. L.	"	Jan. 29, 1884.	R	Has not menstruated since.
23	J. S.	Nuneaton	Mr. Nason	24	M. L.	"	April 7, 1884.	R	May require second operation.
*24	M. G.	Fillingley	Dr. Beadnell	25	M. L.	"	April 17, 1884.	R	Died for want of second operation.
25	M. B.	Birmingham	Dr. Taylor	39	M. R.	"	July 7, 1884.	R	Cannot be traced.
*26	B. B.	Edinburgh	Dr. Hart	26	M. L.	"	Oct. 11, 1884.	R	Requires second operation.

subject, and it is quite likely that opinions may vary as to the conclusions to be derived from this, and I, for one, am quite prepared to admit that so far as it has gone by itself, it is not large enough to base any absolute conclusion upon. But the opinion which I have formed from it, and which is substantiated by more recent experience not yet mature enough for publication, and which has made an increasingly strong impression on my own mind, is, that if a patient is suffering sufficiently to justify an abdominal section for chronic inflammatory disease of the uterine appendages, and only one side is found to be affected, the operation, to be of that lasting and complete benefit to the patient which we desire all our operations should have, must be made bilateral. On such a point as this, of course, the desire of the patient must be paramount as upon most others, and if a patient placed herself under my care for such an operation, and made it an imperative condition that I should not, under any circumstances, remove the second set of appendages if they were found healthy, I should yield to her decision; but I should argue the question with her, and advise her not to subject herself to the risks of a second operation, as seems to be by far the greater tendency in unilateral operations. The list that I now present puts such incomplete operations in a very unsatisfactory light.

NECESSITY FOR COMPLETE REMOVAL OF THE UTERINE
APPENDAGES WHENEVER THE OPERATION IS CALLED
FOR, WITH REPORT OF CASES.

BY

A. VANDER VEER, M.D.,
Albany, N. Y.

ABDOMINAL surgery is not so far advanced, or so well settled, especially in relation to the removal of the uterine appendages, but that we have something yet to learn. The few observations offered in this paper are presented with the view of bringing before your attention some practical points which I believe to be of value.

The question has at times occurred to me in any case that calls

for the removal of the ovaries, Why should we leave behind the Fallopian tubes, or even any portion of the uterine appendages?

The danger that the portion of tube left behind may in some way take on a diseased condition or be still the focus of irritation is to my mind a subject for serious thought.

Dr. Battey no longer makes use of the term normal ovariectomy, but thinks where his operation has done good it has been in cases of diseased ovaries, such as sclerosis, cystic changes, etc. Now when the ovaries are diseased and require removal, what is the necessity of leaving the tubes behind? Does it increase the danger of the operation to remove the tubes with the ovaries?

Of course, when there are strong adhesions, one can understand that then the case becomes more serious and the operation protracted. Mr. Tait has insisted wisely that in the treatment of myo-fibromata of the uterus the entire uterine appendages must be removed, and that the only one in his first fifty cases that failed in the hemorrhage being arrested proved to have been an incomplete operation, and some of the tube was left behind. Now if this is true in uterine myomas, is it not also true in cases of diseased ovaries where the tube and appendages are so likely to suffer sympathetically? Mr. Tait has done a second operation in one case reported where the first operation failed to afford the desired result, that is, the arrest of menstruation, and in this second operation removed the fundus of the uterus, thus surely securing every portion of the tube.

Perhaps my report of cases may be too limited, but I am sure the study of them has impressed me profoundly, and I trust the discussion may bring out the practical experience of others who have given careful thought to the subject.

The first case is from the practice of Professor T. G. Thomas, and reported in the *N. Y. Med. Journal*, Vol. XX., 1874, as a case of ovariectomy with recovery. A brief reference to the case will, I think, be proper at this time.

CASE I.—Miss A. B., æt. 22. Entered Woman's Hospital June 14th, 1873, with the following history:

Menstruated at 12 years. Regular. Flow excessive. Dysmenorrhea. No leucorrhea. For seven years suffered constant pain in left ovary, increased during menstruation and after exertion. Some pain in right ovary at menstruation. For five years has been confined to her bed, not being able to stand or walk without extreme pain. Position of uterus normal. Urine normal. General health good. Appetite fair. Bowels constipated. Some-

what nervous, but no marked hysteria. Has taken morphine for a long time. Counter-irritants for a long time have been tried.

Diagnosis.—Chronic ovaritis. Both ovaries sensitive, left slightly enlarged. Left hospital June 28th, 1873, returning September 15th, 1873. October 26th, Dr. Thomas called a consultation, and it was decided to perform operation for removal of one or both ovaries.

November 20th.—Operation. Ether was given. Operation begun at 3.30 P.M. Incision was made from pubes upward about three inches. Both ovaries were ligated; on left side Fallopian tube was included in the ligature. Both ovaries were cystic and the left one somewhat enlarged. Pelvis was sponged out and wound closed with four deep and six superficial silver-wire sutures. Time of operation, twenty-five minutes.

Patient made a good recovery and was discharged from the hospital February 24th, 1874.

Miss A. B. Married one year from the day of the operation. She had an occasional flow for a few months after the operation and it then ceased. Coitus had always been painful. She came under my care at the Albany Hospital June 7th, 1880, complaining much of a neuralgic pain through the lower portion of the abdomen, through the back and extending down the thighs. Some leucorrhœal discharge. Speculum examination showed no ulceration. Digital examination revealed great tenderness of the roof of the pelvis and marked soreness about the fundus of the uterus. Latter was movable. Under the use of Brown-Séquard neuralgic pill and the galvanic battery she improved somewhat and returned home June 18th, 1880. Says she has not at any time since the operation been entirely free from the pain she has always had. There would be periods when she would feel very much better. Under a tonic course of treatment and with great care, she continued fairly well and could go about; not able to bear much exercise or fatigue until the beginning of 1885, when the pain and soreness increased, followed by a profuse, pus-like discharge from the vagina, this continuing more or less all the time, and when she entered the Albany Hospital a second time, December 21st, 1885, she was suffering much. Bimanual examination revealed a very sensitive condition of the roof of the pelvis, the uterus seemed about normal size, but extending out from the right horn could be felt plainly a largely dilated, and what I believed to be, Fallopian tube. On the left side of the uterus could be detected a very tender point near the left cornu. Speculum examination presented from the os a constant discharge of pus and mucus. I made the diagnosis of pyo-salpinx, and without having read the report of the case as reported in the *N. Y. Med. Jour.* Under the use of counter-irritants to hypogastric and inguinal regions, such as blisters, iodine, and electricity, together with free douching of the vagina with medicated and hot waters, also suppositories of tannin and iodoform, with astringent vectors to cavity of uterus (the latter gave her much pain like uterine colic), with good

tonics, anodynes, and absolute rest she did after a time improve. The discharge ceased somewhat, not quite entirely, and she left the hospital March 3d, 1886, better, but not a well woman. Since she has remained comfortable, using vaginal douches pretty constantly to control discharge and afford relief. Complains constantly of an indescribable weakness about the pelvis. She is at times impressed with the belief that another operation will be required to remove the remaining portion of the tubes, and when I suggested it to her, said she would wait a little while, and if she continued to suffer would have it done.

Here I believe is a case in which we have had an inflammation constantly recurring in the portion of the tubes left behind, and that this woman will not recover perfectly until they are removed.

CASE II.—The second case—Miss. B.—is one operated upon by Mr. Tait at the Albany Hospital, Sept., 1884, and reported in the *Medical Annals*, and in the *N. Y. Med. Record* in full January, 1885. The following is a short history of her case:

Age 33. Subject to hysterical fits for over thirteen years. Hysteria, because patient never injures herself during attack, or becomes drowsy after it, as is inevitably the case with epilepsy. The fits always come on before a menstrual period, which periods are fairly regular, but a little lacking in quantity.

Health good to puberty, but very bad for past twelve years. Chief symptom is intense pain before, but relieved by menstruation. Uterus infantile and anteфлекed. Right ovary enlarged—left could not be felt. Such cases are frequent in England, and the patient's life from beginning to end of menstruation is one long agony. Operation proved right to be cystic and left small and shrivelled. Patient was hysterical during convalescence, and had one convulsion with complete loss of consciousness six weeks after operation.

This patient had several convulsions during the year following the operation and had much of her old bad feeling about the pelvis. It is now a long time since she has been heard from, as stated by her physician, Dr. Boyd. Question: Did Mr. Tait remove all of the appendages and tubes?

CASE III.—The third case is that of Mrs. A., upon whom I operated for removal of uterine appendages. Operated November 21st, 1884, for pyo-salpinx. She gave the following history

Age 34. Married. No children. Been an invalid for eight years, at the beginning of which she injured herself by lifting. This produced severe inguinal pain at the time. Four years later, had sudden gush of blood from vagina. Menstruation regular, but painful and prolonged. Appendages were found adherent. Cystic degeneration of right ovary. Enlarged Fallopian tubes

and fibroid the size of hickory-nut in fundus of uterus. Appendages removed. Tait's knot secured pedicles. Incision closed with five deep sutures. Patient made good convalescence.

At time of operation, I was much in doubt as to complete removal of left tube, and for six months after she still had much of the old discharge from the uterus, which then ceased and from that time on she has been in perfect health. August, 1886, I examined her carefully. No pain about pelvis. Free movement of uterus. Now fibroid could not be felt. A happier woman I have seldom seen. All her old sufferings have ceased.

CASE IV.—Miss M. B., domestic. Age 24. Menstruated at 14 and from the first was irregular. Had leucorrhea and epileptiform seizures. Always vomited at menstrual epoch, unless under the influence of morphine, which was unable to relieve the condition after a few years. Four years ago was in the Albany Hospital. Six weeks under treatment by Dr. Boyd for leucorrhea. She later spent some time in Utica and Binghamton Asylums with little or no benefit. Operation for removal of uterine appendages done May 27th, 1886. A cyst the size of a large cherry in each ovary, otherwise normal in appearance. Left ovary markedly adherent. A convulsion immediately followed operation and another in four hours. A third one—light—on the sixteenth day at the return of menstrual epoch. Rallied well from operation. After twenty-four hours, a marked tenderness of left hypogastric region developed. In thirty-six hours, a profuse, frequent; and greenish vomit which persisted for five days. On the 29th, temperature reached $103\frac{2}{3}$, and reached its highest point on the following day, $104\frac{1}{2}$. By enema, gas was liberated from bowels and two small movements secured. Vomited less and of better character, and temperature fell to $99\frac{1}{2}$ on June 2d, when all the deep sutures (four) were removed and patient had toast and tea for the first time. Bladder emptied naturally on fifth day. Natural movement of bowels on sixth day. Hypodermic abscess developed on tenth day, and stitch-hole abscess on the fifteenth day. Three stitch-hole abscesses and several hypodermic ones developed later. Nourished almost exclusively by rectum for five days. Discharged June 24th, 1886.

This patient has had no convulsions since the third slight one after the operation as reported. She appears well in looks, well nourished, and is much better in her mental condition, but complains of great tenderness through pelvic region. Bimanual examination fails to discover anything abnormal. She has had during the summer many attacks of vomiting, somewhat like those she had before the operation, and is now under my treatment at the Albany Hospital for relief from the morphine habit, and under careful restraint and discipline is improving.

CASE V.—That of Miss M. C. Aged 19. Good family history. Well up to 14 when menstruation began. Epileptic fits

soon developed and grew worse gradually, and since 15 has had severe pain in left side. Operation performed October 6th, 1886, and both ovaries and tubes removed.

Patient made good recovery from operation. Epileptic fits returned on eleventh day and persisted. Discharged October 23d, 1886.

RENSSELAERVILLE, Albany Co., N. Y., {
January, 7th, 1887. }

Dr. Vander Veer.

DEAR DOCTOR:—In answer to yours relative to the Miss M. C. case: She is still having convulsions, although they are not quite so frequent nor as severe as before the operation. Her intellectual faculties are certainly improved. Two months from the time of her last menstruation she passed through quite a mental storm; refused to eat for three days and slept but very little during that time. She recovered as suddenly as she was attacked and now averages about three convulsions a week, and her general health is much better than formerly. Before the operation the number of convulsions had never been less than five or six a week in four years.

Very truly,

L. N. LANEHART.

CASE VI.—Miss K. S. Aged 33. Good family history. Never strong. Menstruated at 12. Never very irregular, but severe dysmenorrhea. After 15, epileptiform seizures accompanied menstruation; and after a few years took on the character of mental aberration. Much worse for past few years. Appendages removed January 13th, 1887, in a state of cystic degeneration. Time, thirty-five minutes. Incision closed with six deep and two superficial stitches. Rallied well from operation, but severe pain followed and one-half grain of morphine given hypodermically the first half-hour. Bowels moved twice the third day, once by enema and once by rectal tube. Later, rectal tube occasionally passed with good results. Urine drawn for five days. Nausea troublesome for a week, but no vomiting save a little mucus soon after operation. Temperature reached its highest point, 101 $\frac{3}{4}$, on the third day, but bowels moved and it declined, but rose on the twelfth day to 101 due to time of menstruation. Stitches removed on the sixth and seventh days. Patient is now doing well.

It is proper for me to state that in all these cases which I have reported, every possible form of treatment had been tried before resorting to the operation. From simple abdominal section I have lost no patient, and believe it to be comparatively safe when properly done by good surroundings. In all these cases, a proper and thorough statement was made to the patient as to her physiological condition afterward.

A PORRO-MUELLER OPERATION PERFORMED BECAUSE OF
AN IMPACTED SHOULDER PRESENTATION.

REPORTED BY
W. H. PARISH, M.D.,
Philadelphia, Pa.

ON December 31st, 1886, Dr. O. H. Allis received a telegram to proceed to Bristol, Pa., in order to perform a Cesarean operation. At Dr. Allis' request, I accompanied him on the earliest train attainable.

The patient was under the care of Dr. E. J. Groom, of Bristol. She was an Irish woman, by name Mary Leporo, the wife of an Italian, æt. 26 years, of small stature, but apparently of previous general good health. In September, 1886, then about six months pregnant, she was hooked by a cow and narrowly escaped a threatened miscarriage. She had reached the full period of pregnancy, and had been in labor over seven days. The membranes ruptured about four hours after the pains began. The pains were weak and infrequent, for five or six days, when they became severe. Prolapse of the cord occurred on the sixth day of the labor, and about the same time a hand protruded from the vagina. The child was dead when the cord became prolapsed, and had probably been dead for several hours, if not longer. The exact time of death of the child was not ascertained. I extract the following from a letter received from Dr. Groom; he says: "I was called to see her for the first time on the 24th of December, 1886, she saying that she had been in labor at that time for some four hours, and that her waters had broken. I made an examination, and found a hard and unyielding os, not dilated larger than a five-cent nickel. I thought she had made a mistake as to the rupture of the membranes. I called three or four times daily for the next four or five days, and found things practically about the same as on my first examination, still thinking that she had made a mistake about the rupture of the membranes. On the morning of the 30th, I found the os yielding; it was then about the size of a fifty-cent piece. I then found that she was right about the rupture of the membranes, and for the first time I thought I could detect the presentation of the child. I left, fully believing that I had a breech presentation to deal with. I called about noon, and found things about the same; but on calling again in the evening, I found her suffering severely with strong pains, and a hand presenting at the vulva."

Dr. Groom writes further: "I tried turning, at first without the aid of an anesthetic; failing, I then completely anesthetized her, and tried patiently and persistently for near two hours; still

failing, I then called in the assistance of Dr. Potts. The patient being again anesthetized, Dr. Potts for half or three-quarters of an hour endeavored to effect turning, but was not successful. We then let her rest for some two hours and called in Dr. Dingee, when the patient was again etherized, and this gentleman likewise failed in his efforts at turning."

When seen by Dr. Allis and myself, when the patient had been in labor for over seven days, and the uterus had been emptied of its waters for seven days. The cord had been prolapsed for over twenty-four hours, and from the appearance of the cord at the time of its prolapse, the child must have been dead for some time previously. A hand was protruding from the vagina, evidently belonging to a child of large size. The prolapsed arm was swollen and of dark mottled appearance. The patient was very restless, exhausted, and with a pulse of 120 per minute. The uterus was firmly retracted about the child, and the patient was experiencing constant pain. Three experienced obstetricians had made faithful and persistent efforts at producing podalic version over a period aggregating about three hours, without and with an anesthetic, in a uterus emptied of its water at that time for nearly seven days and in a condition of tetanic contraction. The patient's surroundings were unfavorable, the ignorance and poverty of the family having rendered judicious and proper nursing impracticable. An examination made by myself showed an offensive sanious fluid escaping from the uterus, and the cervix rigid and dilated to the extent of about one and one-half inches in diameter. A shoulder was jammed into the os and into the superior strait, and the uterus everywhere was firmly applied about the child, so firmly, in fact, that though the patient was fully etherized, I could not introduce my hand far enough to reach the lower extremities. The pelvis was under the average size; the patient had been delivered once previously with forceps after a tedious labor. It seemed to me that it would be impossible to deliver the patient by either cephalic or podalic version. The failures of the attempts made by three able and experienced obstetricians, and the unyielding uterus and the undersized pelvis forced a conclusion that attempts at version on my part would prove useless, and under the circumstances probably highly harmful. Evisceration was also decided against, because there was every reason to believe that the uterus had done itself irreparable damage through its prolonged retraction against the eminences of the child. The contusion incident to this retraction, the admission of atmospheric air over a period of seven days, and the character of the discharge, rendered it very certain that gangrenous changes had been going on in the endometrium and placenta, and that septic inflammatory action of the uterine lymphatics had already begun. The patient was in a condition of exhaustion. Evisceration alone would not have sufficed to secure delivery; it would have been necessary to have bisected the child through the lumbar region, and to have removed separately the

lower and upper sections. The condition of the uterus and the small size of the pelvis would have rendered this procedure a lengthy and exceedingly difficult one, and doubtless impracticable without the infliction of additional very serious injury to the uterine tissues. The removal of the child per vaginam would have left a putrefying endometrium and septic lymphatics, and greatly contused uterine tissues in a condition of advancing septic infection. I stated to the gentlemen present that evisceration, bisection, and delivery per vaginam were practicable, but that I felt certain the patient would die if thus delivered. This conviction had already been arrived at by Drs. Groom, Potts, and Dingee. They believed a Cesarean section was indicated, in which view I coincided. Dr. Allis had requested us to decide upon the method of delivery, and we proceeded at once to the operation.

Dr. Allis made the usual incision in the median line, extending it above the umbilicus. The uterus was found firmly retracted, and was elevated from the abdomen. A rubber tubing was placed about the cervix, securely controlling the uterine circulation. The adjustment of the tubing about the cervix was more difficult than usual, because of the transverse presentation of the child, and it was because of this difficulty that the incision was carried above the umbilicus. The elevation of the uterus from the abdominal cavity occurred during the application of the tubing. The escape of fluids from the uterus was guarded against by means of warm aseptic towels adjusted about and over the abdominal incision, and by inclining the uterus well forward before incising it. A vertical incision was now made in the median line of the anterior surface of the uterus and the child extracted without special difficulty. The placenta was not in the line of incision and there was no hemorrhage, the circulation being under control. The placenta was partially detached and softened, and the interior of the uterus emitted an exceedingly offensive odor. The endometrium was of a greenish-black appearance. The interior of the uterus presented exactly the appearance repeatedly seen by myself in the post-mortem examination of at least a score of cases of puerperal septicemia in the Philadelphia Hospital during the last fifteen years. The appearance of the uterus fully verified the previous conviction that septic changes had already been established, and led me to further decide that the patient could not possibly recover if the uterine body was permitted to remain. In this view Dr. Groom fully coincided. Dr. Allis stripped off the endometrium and yet the surface of the uterus under the endometrium did not change this view. The dark mottled appearance of this bared surface indicated serious contusion, and I felt certain that the lymphatics and sinuses of the uterus were fatally septic. We proceeded to perform a Purro-Müller operation. Two transfixion pins were carried through the cervix and a constricting wire was substituted for the rubber tubing. The uterus was removed about the junction of the cervix with the body. With the uterine

body were removed also both broad ligaments and their contents. The stump was secured externally by means of the transfixion pins and the abdominal wound was closed by means of carbolized silk sutures. Antiseptic measures were resorted to during the operation in reference to sponges, instruments, hands, cloths, etc. The spray was not used.

The peritoneal cavity was well protected from the entrance of septic fluids, blood, etc. The intestines escaped from the abdominal cavity to some extent—an accident that should be and can be guarded against. Before closing the incision, the peritoneal surface was cleansed as far as seemed indicated.

Immediately after the operation the pulse was 130 per minute, and the patient died in about forty-eight hours.

Dr. Groom had charge of the after-treatment, and he has reported that after recovery from the ether she was quite free from pain, but was evidently very weak, with faintness and difficult breathing. He ascribed the death to heart failure. He says, "with the heart gradually failing, the pulse steadily grew weaker until for some ten or twelve hours before death it was almost imperceptible, despite the liberal use of the most active and diffusible stimulants." He further says, "after carefully going over the case, I am at this time decidedly of the opinion that the liberal use of anesthetics was positively harmful. She surely did not die of peritonitis, nor of septicemia, nor of shock, but of what seemed very clearly to my mind heart failure. She must have been under ether for some six or seven hours out of the last twenty-six hours."

I have no doubt that Dr. Groom is right in reference to the harmful effects of the anesthetic in this case. In cases of septic infection, the prolonged or even the short use of ether, in some other cases I have been called to, has seemed to seriously harm the patient. However, the exhaustion incident to such a prolonged labor, the fruitless, though justifiable, attempts at delivery, the septic condition of the patient at the time of the operation, the shock inseparable from the character of the labor, and the Porro-Müller section, all contributed with the anesthetic in bringing about the heart failure which was doubtless the immediate cause of death.

A CASE OF INCOMPLETE ABORTION IN TWIN PREGNANCY.

ONE FETUS LOST AT THIRD MONTH, BUT ITS PLACENTA RETAINED TO DELIVERY AT TERM OF THE OTHER TWIN.

BY

STANLEY P. WARREN, M.D.,

Portland, Maine.

"You can only form the minds of reasoning animals upon facts; nothing else will be of any service to them," said Mr. Gradgrind to the schoolmaster. For such noble souls all speculation upon the subject now presented is but time wasted; to the real student it may possibly be of service in helping to settle the rationale of such curiosities of midwifery.

The clinical history is this :

A woman about 35, usually well, VIIIpara, was at the end of gestation. There had been some feeble abdominal pain through the afternoon, but toward midnight she found herself in active labor, and the child nearly born. The second stage was completed just as I entered the room. A midwife was grasping the uterus externally, but the secundines were undelivered. Substituting my hand for hers, the womb was felt to be well contracted, tender to pressure, and still containing the placenta. The cord was cut and the child removed, when after a little more compression the placenta and membranes came away *en masse*. Examining these, according to custom, I saw at once that I had something unusual. The placenta was quite large and of normal construction, but upon its maternal side lay—something. It was a disc of tissue, tough and yellow, about five inches across and half an inch thick, and resembled a common pan-cake. The edges were beveled, ending in a ragged fringe of thin membranous material. One surface showed traces of blood-vessels, empty and united at a common centre, the other was irregular and nodular. A delicate diaphanous ribbon of tissue, two feet long and half an inch wide, connected the disc with the placenta, and between its layers was thought to be traces of vessels, as it was held up to the light. In a word, it looked very much like a small placenta in advanced fatty degeneration. On the fetal (?) side were small cavities, covered over with thin fibres, in which were tough brownish coagula, one nearly two inches long and as thick as an ordinary lead pencil. No fetus could be found, either upon the bedding or in the cavities in the mass described.

The lady was told of the discovery and immediately gave her explanation of it in this way. This was her ninth pregnancy,

of which the first was with twins. She had always had quick, easy deliveries, and this pregnancy was like the rest—natural enough, except in one particular. At the third month of gestation she flooded badly for a day or so, and the blood continued to dribble for nearly a whole month. During this time she had a painful lump in the right groin, which a physician, of recognized ability, thought was an abscess, and wanted to lance it. This she would not allow, but an old woman poulticed her with Indian-meal and buttermilk for several days and the sore spot disappeared. Thinking she had miscarried, she looked carefully in the discharges for the baby, but saw nothing but “lumps of flesh.” Soon after she felt life, and from that time to delivery was as well as usual when in the family-way.

The rest of the clinical story is briefly told. There was little hemorrhage after completing the third stage, the uterus contracted well, but was large, reaching up beyond the umbilicus. Manual pressure was complained of, especially over the right side of the fundus. Feeling sure that the tenderness was due to coagula, I attempted to explore the cavity, but could only pass one finger through the cervix, and there detected nothing. Not being in the habit of giving ergot in labor, I simply continued manipulation for an hour, and then left her all right. The next morning she was comfortable, except that the uterus was still quite tender, so much so that she had entirely removed the binder. The whole lying-in was perfectly normal and, she said, better than usual.

The specimen was examined by several experienced obstetricians, who, after careful study of its structure and history, concurred in the opinion that it was a degenerated placenta of between five and six months' growth. The question whether it should be called a mole (*mola carnea*) is immaterial at this time, since the mere *name* throws little light upon its explanation.

The peculiarities of the case may be summarized thus: Six months after an apparent abortion, a ten-pound healthy child is born by a short easy labor, having the usual normal adnexa. Associated with the placenta is a fleshy mass, with the general characteristics of a placenta, but immature and degenerate. How can such a state of things be accounted for?

Here is no chance to tell of brilliant instrumentation in delivery, nor of life snatched from the very jaws of death. There is an evident warning for caution, in making active interference with a retained placenta, a routine practice after abortion, since, as in this instance, the impregnation may be a double one. But several questions are naturally suggested, like the following: What was the mass? Was this a case of superfe-

tation, with incomplete abortion? If so, why incomplete, either in respect to the placenta of the lost twin, to the other ovum, or the entire uterine contents? How old was the lost fetus, and how long had the placenta been retained? Such a complication may never occur again, and yet "it is the unexpected which happens." At any rate, it should go on record, so that all such anomalies can be studied in their theoretical and practical bearings.

For reasons given, I believe that the specimen was primarily a normal placenta. 1. In the absence of any fetus to which it must have been dependent, was it supplementary (placenta succenturiata) to the other? It does not agree, in general, with classical descriptions of such bodies. "Small accessory placental developments, due to persistence of isolated villous groups, which form vascular connections with the decidua vera." (Lusk.) If secondary, and hence a part of the other, it ought to have had a corresponding vitality, which it did not. The absence of the fetus is no proof that it was not an independent organ, for the soft gelatinous germ in the earlier weeks may be entirely absorbed, while the placenta belonging to it may still be nourished for longer or shorter time. (See case of Skene's reported below.) I do not believe that it was supplementary.

2. Could it have been the placenta that belonged to the preceding gestation, some eighteen months before? It would have been too small for the demands of a full-term child, which that one was. The union, though very slight, between the normal and degenerated placenta implies a living bond that necessarily makes the two correlated parts of the same conception. Besides, on common-sense grounds, the patient herself ought to refute such a surmise, for an experience in eight other deliveries would have taught her that after the child must follow the after-birth. Moreover, her physician is a guarantee that every step in the professional service was taken *secundum artem*. To be sure, cases are recorded where full-term placenta have been absorbed after delivery, but I question whether there is theoretical or practical evidence that one could be stored away in utero from one pregnancy to and through another. The whole physiology of gestation is against such an idea.

I do not, therefore, believe that it belonged to or was held over from the preceding labor.

3. Was this an example of twin fetation, where one twin is

blighted and the other matured; a true illustration of "the survival of the fittest!" Theoretically, such a thing is possible, and the fact is illustrated by actual experience. Lusk says: "In such a case (the death of one twin) the ovum and the contained fetus may be compressed by the surviving twin, and be flattened against the uterine wall, giving rise to the so-called 'fetus papyraceus,' or it may degenerate into a mole; or the aborted ovum may be expelled, while the living fetus advances to the full term of gestation." Stewart reports a case of twin pregnancy continued to term, notwithstanding the death of one fetus; first fetus dead, macerated, and cord decayed, and presented first; second fetus presented by the arm, delivered by version after long effort, but still-born. (AM. JOUR. OBST., Oct., 1879.)

The physiology of multiple conception is decidedly complex. When two ova are impregnated, each may become implanted at separate points upon the decidua vera, and there mature with independent placentæ and membranes. Such was probably the condition in the present instance, as there were two placentæ (allowing, as I do, that this mass under discussion was placental). That it was possible for only one twin to be aborted implies that each was contained in its own special cavity. Now why the abortion was only partial, that is, why the uterus, once aroused to action from whatever cause, should clear itself of only a small part of its burden, and then quiet down again, as if satisfied with that half-hearted work, is very difficult, perhaps impossible to explain. Nor are such irregularities in the manner of abortion restricted to twin conceptions only, but they are found in single ones as well. For, in addition to the case of Stewart (cited above), Garrigues reports an instance of hemorrhage at the fourth month, for four weeks; bleeding ceased and patient felt well; nine months after last menstruation, fetus and placenta in one mass were expelled perfectly fresh, fetus apparently at fourth month, placenta six by eight inches, appeared hard, white, and lardaceous. (AM. JOUR. OBST., Sept., 1884.)

While studying the bibliography of twin fetation, an article in the AM. JOUR. OF OBSTETRICS, Oct., 1881, was found that may perhaps be useful in helping to explain why only one twin was sacrificed. Budin reports two cases of twins where there was a peculiar arrangement of the ova. Before delivery, one

sac had within it another sac, and each had contained a fetus. Nearly the entire circumference of that ovum, situated at the fundus, had been covered by the membranes of the other, except between the two placentæ. Of two hypotheses, he thought that the second ovum (the one delivered last) arrived first in the uterus and grew there; that the ovum (delivered first) afterwards became impregnated, spread from its point of attachment and made room for itself wherever it found space. It thus swallowed up, as it were, the other ovum, and filled the uterus completely. In the first labor, one child had cephalic, the other breech presentation, both were females and lively. In the second case, there were the same presentations, both males, version was used for both, and both saved. The secundines were delivered spontaneously. It seems to me that, with such an arrangement, it would be more possible for one fetus to be expelled and the other retained, than if the more usual method prevailed. Thus if such a condition had existed in my case, after one sac had ruptured and its contents escaped, the uterine tension would have been, by so much, lessened, and the second ovum more kindly supported, even to term.

4. Is there anything in the clinical history to account for the attempted, but incomplete, abortion? As far as the patient herself knew, it was spontaneous, and the first in her life. In the absence of any more evident reason, perhaps the simple unusual distention was stimulus enough to arouse contractions. Once the tension was relieved, the remaining occupant was carried without remonstrance, as at other like occasions, to the normal limit, in spite of the cellulitis that followed the partial abortion. Inflammatory processes about the pregnant womb specially induce premature delivery. That without known cause abortion should take place, and then with a probable cause it should not, are among the queer contradictions in the case. According to "the regular laws of nature," when an organ has outlived its usefulness its vitality ceases, and "its end is destruction." Here is an instance in direct contradiction to those laws. An organ "destined to the hematosis, and perhaps also to the nourishment of the fetus" (Cazeaux) lives on, long after its necessity is ended. Both placentæ were, in fact, nourished impartially for several weeks, when during that time one could not by any possibility have been of the slightest use in the system. Not until after two-thirds of gestation's life had

passed was the parasite cast off, and then so gently that the existence of the rightful dependent was unaffected thereby. The usual means to accomplish the separation was used, that is, by hemorrhage between the two deciduæ. It must have been a localized and gradual action, or else the blood supply of the other ovum would have been unfavorably affected.

But this is only saying, it is so because it is so. As the school-committee-man said, out west, "we know a, b, c is vowels, but we want to know *why* they is vowels." This is just the conundrum at present. Even Lusk, that most accomplished teacher of midwifery, does not give any satisfactory explanation for incomplete abortions. The irregularity of the irregularity is, that of four bodies that could have been expelled, but one of them was so. It is common enough, in single pregnancies, for the placenta to be retained, after the fetus escapes, a longer or shorter time. Hemorrhage takes place, the womb acts vigorously, and the foreign body comes away, piecemeal or entire, often horribly offensive. Rarely is it carried to term, aseptic and entire, and then gotten rid of naturally. Skene reports a case of continued growth of the placenta after the death of the fetus; abortion induced at the seventh month, after flooding at three and one-half months; membranes ruptured and waters large; no fetus found; placenta at fifth month, anemic, but evidently vital when expelled (N. Y. Obst. Soc., Dec. 20th, 1881). But that the womb, with its muscles developed by pregnancy, should attempt to unload itself, at its time of election for premature delivery, and only partially succeed, then afterwards quietly complete its allotted period of gestation, carrying a dead placenta beside a living child and its normal dependencies, is an instance of toleration that is unique even among the curiosities of obstetrics.

I can but think, however, considering all the practical and theoretical bearings of the subject, that it was a case of twin fetation. At the third month one fetus was sacrificed, but the uterine muscles were, at that period, too feeble to complete the work and tear off its placenta. Therefore the latter continued to be sustained, until the uterus, grown stronger, was able to break its vascular connections. Its vitality then ended and it took on the more common form of retrograde metamorphosis. By some strange freak of the economy, the useless mass was graciously tolerated, until its ultimate disposal at the maturity

of the remaining full-grown twin. Could the lost twin's epitaph be written, it might be in those simple yet eloquent lines, "blown and blasted."

NO. 99 FREE STREET.

CAN WE INFLUENCE THE MECHANISM OF LABOR BY EXTERNAL PRESSURE OVER THE SACRO-SCIATIC FORAMEN?

BY

A. F. A. KING, M.D., Washington, D. C.,

Prof. Obstet., etc., Med. Dept. Columbian University, etc.

EXAMINING some of the cadavers in the anatomy rooms of the Medical Department of Columbian University for quite another purpose, I was surprised to find how easily external pressure over the sacro-sciatic foramen, externally, would produce an elevation or protrusion at the same point in the interior of the pelvis.

Removing the uterus and its appendages, and anointing the pelvic cavity with vaseline, and placing in it a good-sized, recent, fetal head similarly anointed—the head being placed low down in the pelvic cavity, with the occiput towards an acetabulum and the forehead towards the opposite sacro-iliac synchondrosis—pressure with the finger-ends over that sacro-sciatic foramen towards which the forehead was directed easily *caused the head to rotate*, bringing the forehead to the sacrum and the occiput to the pubis. Hence the inquiry: Would it be possible in the living subject, during labor, when rotation fails to take place, to expedite it by this manipulation? It should, of course, be remembered that the external pressure will cause the fetal part in contact with the foramen to move in a *posterior* direction towards the sacral hollow. Thus, if it is found to be of any value, the pressure should be made in the left occipito-anterior position of a *head* presentation, and in the left mento-anterior position of a *face* presentation only upon the *right* sacro-sciatic foramen, so as to cause the *occiput* in the one case, and the *chin* in the other, to come towards the *pubis*; while in the right occipito-anterior and right mento-anterior positions of the same presentations, respectively, the pressure must be made

upon the *left* sacro-sciatic foramen ; and so of the other positions and presentations.

It was also observed, in the dead subject, that the vectis or forceps being applied, it was easy to feel the end of the blade on the outside, through the tissues covering the foramen, and pressure upon the instrument at this point would distinctly move the handle and also cause rotation.

It may be interesting also to note that on bending the lower extremities of the cadavers backwards as far as possible, thus bringing them into the same relation with the trunk as would be produced by *kneeling*, it was found that the *heels* just reached the sacro-sciatic foramina, and firmly pressing them against the body at this point, made the same elevation on the interior of the pelvic cavity, and produced the same movement of the head as had been accomplished by digital pressure. Hence the further inquiry : Would a kneeling posture during labor, with the heels at the points indicated, expedite labor by promoting rotation ?

While the subjects on which these experiments were performed were for the most part emaciated, one of them was not so, but retained a moderate rotundity; yet this did *not* make any great difference in the result.

In one subject whose abdominal viscera had not been disturbed, but in which an opening had been made in the abdominal wall down to, but not wounding the peritoneum, the slightest pressure over the sacro-sciatic foramen would produce a distinct bulging of the peritoneum at the site of the artificial opening, even a much more distinct bulging than could be produced by much stronger pressure made upon the anterior surface of the abdomen.

It may be said a dead body is not a living one, and the tonicities of the muscular and other structures covering these foramina is not the same in the living as in the dead, yet, as any one may demonstrate, pressure over the foramen in the *living* will also produce an impulse that may be perceived by the hand placed upon the abdomen, and even by the eye, provided the abdominal muscles are sufficiently relaxed.

In the mechanism of labor, when rotation is tardy or fails to take place, and when the presenting part is surrounded by structures anointed with mucus that make it glib and slippery, converting the internal soft *depression* of the sacro-sciatic

space into a solid *elevation* by the fingers, and maintaining this state of things during a few labor pains, may possibly have more influence in promoting the normal movement of the presenting part than we have heretofore imagined.

At any rate, having made these observations, I have thought them of sufficient scientific interest to deserve publication. I may add that the experiments were shown on one occasion (January 12th, 1887) to Drs. Joseph Taber Johnson and S. C. Busey, who kindly visited the dissecting room at my request; and on another to Drs. Benj. G. Pool, H. M. Cutts, F. C. Fernald, and a number of students.

CORRESPONDENCE.

EARLY DIAGNOSIS OF EXTRAUTERINE PREGNANCY.

BIRMINGHAM, March 7th, 1887.

SIR:—Will you kindly allow me to draw attention to a sentence on page 58, of the January number of your JOURNAL, where Dr. Coe is made to speak of “the positive dictum of Mr. Tait regarding the impossibility of recognizing the condition of extrauterine pregnancy before the abdomen was opened?” Will you kindly permit me to correct this misstatement, for I have made no such positive dictum concerning the condition at all. In the discussion at the Brighton meeting of the British Medical Association, pertinent to the recommendation of the destruction of the fetus by electricity, I asked the question, Who had ever recognized an extrauterine pregnancy before the period of rupture, that is from the ninth to twelfth weeks? Some in the audience said they had. I replied I never had, for the reason that in none of my cases had there been any symptoms prior to the rupture which called for any examination. I, therefore, could not but regard it as extremely exceptionable that the condition should ever be diagnosed before that time. I do not know where Dr. Coe has seen a report of what I said, but if that report says anything beyond what I say now it is inaccurate, and if it says what I now repeat, Dr. Coe has misunderstood it. I am, etc.,

LAWSON TAIT.

THE VAGINAL TAMPON IN PELVIC ADHESIONS.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

DR. ERNEST F. TUCKER, whose letter appears in the March number of the JOURNAL, credits me with the ambitious attempt "to overthrow one of our standard methods of treatment." A more careful perusal of my paper, as well as a reference to recent views on the physics of the pelvis, would have convinced him that I simply called attention to certain facts which may now be regarded as quite elementary.

Although there is no advantage in prolonging a discussion which, on his part, seems to be confined to an expression of his personal opinion, I cannot permit some of his statements to pass unchallenged. It is noticeable that he touches very lightly, if at all, on the subject of deep intra-pelvic adhesions, upon which I laid most stress, and confines himself to shortening of the utero-sacral ligaments, the usual consequence of which is ante-, *not* retro-displacement of the uterus. A glance at Winckel's well-known drawing will make it clear that fixation of the retroverted organ cannot result from cicatrization of the utero-sacral ligaments alone, while the fundal adhesions are hardly accessible to direct pressure through the vaginal fornix, even if the uterus is drawn down according to the familiar direction. By this manœuvre, Dr. Tucker affirms, "the packing is brought more directly to bear on the posterior surface of the uterus." Is this true? Do we not really depress the vaginal roof at the same time, so that we lose as much in one way as we gain in the other?

The unqualified statement made by him, the writer, that by elevating the entire adherent uterus we put the adhesions on the stretch, so as eventually "to allow the fundus to move forwards," is simply his own opinion, and, as such, can hardly be accepted as equivalent to a scientific fact. If I remember rightly, it was the object of my paper to show that by elevating the vaginal roof we raise the uterus and its adhesions *simultaneously*, and hence we do *not* stretch the latter. It is unnecessary to again call attention to the fact that by exerting pressure against the fundus of a fixed retroflexed uterus, we *increase* the existing flexion.

I am not aware that I ever questioned the truth of the concluding statement, that "there is hardly any one engaged in the practice of gynecology who has not been a witness more than

once of the great benefit derived from packing up a retroverted uterus."

To the direct criticisms in Dr. Tucker's letter it is hardly necessary to reply. My experiments on the cadaver, as I clearly stated, were performed simply with the view of determining roughly the extent to which the posterior fornix could be elevated by extreme pressure, such as could not be tolerated by the living subject. Posture has nothing to do with the question, and a close comparison of the conditions in the dead and in the living would be manifestly absurd.

I distinctly explained that adhesions were *not* comparable to elastic cords. Reviewing my statement, that it is impossible to fix both ends of an intra-pelvic adhesion in order to "stretch" it, my critic expresses the opinion that this fixation can be obtained "if sufficient cotton is placed between the cervix and the rectum." But, he forgets that, although we are not "dealing with sticks and rubber bands," as he sarcastically remarks, we *are* making pressure against the yielding vaginal roof with a substance that does not oppose a firm resistance. How long the tampons retain the position in which they were so accurately adjusted, will be apparent on examining the patient again after she has walked about for a few minutes.

The most potent argument urged against me is my own confession that I had ceased to have, or to pretend to have, that firm faith in the efficacy of the vaginal tampon which is the prerequisite to successful treatment. Still, it is rather unfair to assume that, because a man's enthusiasm in favor of a certain method has now cooled, he has not carried out its details intelligently and conscientiously in the past.

When it comes to the question of practical results, which is, of course, the most important one, Dr. Tucker must acknowledge that the opinions of the gentlemen who discussed the paper indicate that their experience, although somewhat more extended than his own, has not always been as satisfactory.

H. C. CoE.

TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF NEW YORK.

Stated Meeting, March 15th, 1887.

The President, DR. PAUL F. MUNDÉ, in the Chair.

PESSARY FOR URETHROCELE.

DR. MCLEAN presented a pessary which he had been using for some time for the relief of urethrocele and incontinence of urine. It consisted of a shank made of soft brass, attached to an abdominal pad, and of a steel spring covered with soft vulcanized rubber. The spring exerted pressure on both sides of the urethra, and the instrument was held in position by the ordinary abdominal belt. It was easily inserted. His own experience with it dated back three years, and Dr. Skene, who had used it even more extensively, had informed him that he considered it a most valuable instrument. The speaker said, further, that although the pessary was, as yet, hardly as perfect as he could wish, he offered it as a new means of effectually elevating urethrocele. The lateral limbs of the instrument occasionally irritated, and this was one of the objections which he hoped in time to remedy. As it was, a little shaping of the limbs would prevent such irritation.

DR. HUNTER considered the instrument a very ingenious one, and thought that it might also be adapted to cases of cystocele.

DR. MCLEAN stated that he so used it by giving it a little different shape.

DR. HANKS thought that an objection to the instrument was that the constant pressure from the spring might abrade the vaginal wall. The instrument gave no rest to the soft parts, for the pressure was not intermittent.

DR. MCLEAN replied that very little pressure indeed was requisite to keep up the urethrocele, and that practically the instrument did not injure the tissues at all.

DR. PEIRCE asked if the patient could adjust it herself. On receiving an affirmative reply, he added that then the tissues could be relieved, since the pessary might, if necessary, be removed a number of times daily.

DR. MCLEAN said that the amount of pressure exerted could be exactly regulated by straightening out the limbs of the instrument.

THE PRESIDENT inquired if it had been used in those very common cases, so difficult to treat satisfactorily, where there existed frequent desire to micturate on account of irritable neck of the bladder, as also in cases of incontinence. He referred in particular to cases where, on local examination, the uterus is found in good position, and is making absolutely no traction on the neck of the bladder.

DR. McLEAN replied that he had not used it in exactly such cases. In case of old women, however, with flaccid urethræ and resulting incontinence, it had proved of great utility in his own practice as well as in that of Dr. Skene.

THE PRESIDENT stated that in the class of cases he had in mind, the Hodge, or the Thomas' open-cup, was sometimes serviceable, particularly where there existed a downward sagging of the uterus. He was convinced that we did not yet possess the ideal pessary for supporting a cystocele. It was a most difficult thing to do efficiently. In his hands, the Gehrung acted to the best advantage, and he could recall many an instance of large cystocele in old women where this instrument was most efficient. The Gehrung, however, had the disadvantage of retroverting the uterus, and great care was requisite in its application, else it would inevitably turn around in the vagina.

DR. McLEAN thought that possibly the instrument might be of use in case of irritable neck, provided that care was taken not to allow it to press on the neck of the bladder. In an aggravated case of such a nature complicated with large urethrocele he had finally effected a cure.

THE PRESIDENT suggested that the utility of the instrument might be extended to cases of anteversion and anteflexion by adapting a bulb to the vaginal portion.

DR. HANKS queried if, by making the instrument smaller, it might not be of utility in the *enuresis nocturna* of little girls, an affection which it was frequently very difficult to relieve by any means. He thought that it could be made to act by temporarily occluding the urethra.

THE PRESIDENT hardly thought that it would prove of value in such cases.

DR. GRANDIN questioned if such an application of the pessary would not simply aggravate matters, and cause incontinence in the daytime as well.

DR. NILSEN recalled a case where a little girl had been forcibly thrown down, with a result of dislocation of the urethra, for the relief of which he had been using small cotton tampons. The pessary exhibited would probably act well in this instance.

MODIFIED ANEURISM-NEEDLE.

DR. HUNTER presented an aneurism-needle, which he had modified so that when it had passed through the tissues a certain distance it could be made to curve around and to project further. It would be in particular of utility for carrying ligatures through the broad ligaments, as, for instance, in vaginal hysterectomy. He stated that the instrument was more under the control of the operator than was the one recently presented to the Society by Dr. Polk.

THE PRESIDENT was inclined to consider the instrument an admirable one, provided it were only strong enough to be forced through the tissues. He referred to the danger of making much traction on the broad ligaments in cases where they were adherent. He stated that he had used Dr. Polk's needle and found it useful, although the handle was hardly long enough.

DR. HUNTER stated that he had a number of times seen hemor-

rhage result from traction on the broad ligaments, although there were no adhesions.

ÉCRASEUR.

DR. CHAMBERS presented an *écraseur* which he had bought in Paris, with the name of the inventor of which he was not familiar. He showed it more particularly because it seemed to him to possess certain points in which it was superior to all others, for, as he had stated in his paper read at the last meeting, he did not indorse any *écraseur* for the removal of fibroids. The special advantage of the instrument was the fact that the wire-holding prongs could be opened, which facilitated the adjusting of the wire.

DR. PERRY said that he had used the instrument for a number of years, and could vouch for its utility. He considered its principal value to be as a tourniquet for the removal of pediculated fibroids.

THE PRESIDENT stated that the instrument was a modification of Chassagnac's *constricteur*, differing only in that the slide enabled one to open the blades and thus facilitated the passing of the wire. Furthermore, the aim of the *constricteur* was to cut through the tissues, whilst the *écraseur* sawed through, and hence the former was not so likely to draw in neighboring tissues.

DR. HUNTER considered the instrument entirely too complicated, a point in which Dr. CHAMBERS agreed with him fully.

TWO CASES OF SUCCESSFUL VAGINAL HYSTERECTOMY, WITH SPECIMENS.

THE PRESIDENT presented two carcinomatous uteri which he had successfully removed *per vaginam*. In the first case there existed epithelioma of the cervix, and in the second medullary carcinoma of the entire uterus.

The first operation he had performed on February 3d. The patient was aged 55, the mother of three children, the last delivery having occurred fifteen years previously. The operation was very difficult on account of senile atrophy of the vagina. The patient occupied the dorsal position, and the operation was performed with the uterus *in situ*. He began by drawing down the uterus as much as possible and then passed a deep ligature by means of Polk's needle around each broad ligament. Then on the left side he passed successive deep ligatures, cutting the tissues after each with scissors. He then opened the vesico-uterine pouch and tied the broad ligament, passing his ligature from within outwards. Next he followed the same steps on the right side. The anterior vaginal wall and peritoneum were stitched together. Douglas' pouch was then opened and the uterus was removed, when he found that the sutures which he had placed posteriorly, uniting the posterior vaginal wall with the peritoneum, had not included the tissues, and there was in consequence profuse hemorrhage which he finally controlled by a series of deep sutures. The operation lasted one hour. On the

twentieth day the sutures came away. The bowels were moved on the fifth day. The patient had convalesced well without any rise of temperature. The after-treatment had consisted in packing the vagina with iodoform gauze. This patient, he thought, ought not to suffer recurrence.

The second case was operated upon on February 23d. The disease had already spread to the parametria, and great difficulty was found in opening the vesico-uterine pouch, since the tissues were so soft that he could not be sure of his landmarks. He worked with blunt scissors and suddenly they penetrated a cavity; there was a gush of fluid, and he thought he had entered the bladder. The steps of the operation were similar to those in the first case. After severing the uterus he found himself unable to extract it, because he had not cut the upper margins of both broad ligaments. This accomplished, the uterus was removed without difficulty. The operation lasted two hours. It turned out afterwards that he had not opened into the bladder, the fluid undoubtedly having come from the peritoneal cavity. The patient convalesced perfectly. He was satisfied, of course, that the disease would return in this case, but the operation certainly proved what could be done in this direction without endangering life. A few weeks afterward he went to Bridgeport to operate on a similar case, but did not complete the operation, in view of the difficulties met with in the case just narrated, and the impossibility of offering the hope of a radical cure. He simply curetted.

EPITHELIOMA OF THE VAGINAL FORNIX.

THE PRESIDENT also showed this specimen which he had removed from a virgin of 24. She had consulted him for bloody, purulent vaginal discharge, which seemed to be telling on her strength. On local examination, he had found on the posterior vaginal wall at the fornix, fully one inch from the cervix, a small growth, the size of a strawberry, which bled freely. The microscope showed that it was epithelial in character. He excised it, and seared the base with the Paquelin, and afterward with nitric acid. The disease in this locality was extremely rare. Breisky refers to two or three cases of papillomatous growths of doubtful malignancy, and says that primary epithelioma of the vagina is a great rarity.

In the discussion on these specimens, DR. HUNTER stated that he remembered an instance of the disease in the vagina fully one-half inch below the cervix which terminated fatally.

DR. HANKS recalled a case of sarcoma of the posterior wall of the vagina, entirely independent of the cervix.

THE PRESIDENT remarked that sarcoma was not so rare.

DR. JANVRIN said that the second specimen suggested the question as to whether, when the disease had extended so far, we were justified in performing hysterectomy. Two years ago, he

started to perform kolpo-hysterectomy, but when he had incised the anterior cul-de-sac, he found that the disease had spread beyond the uterus, and he substituted supra-vaginal amputation. The patient remained in good condition up to six weeks ago, when she entered the Skin and Cancer Hospital, and he found the whole of the pelvic organs involved, and curetted. Since then, he had seen a number of other instances where he had substituted the high amputation for kolpo-hysterectomy, because the disease had spread beyond the uterine tissue. If, then, he would ask, the peritoneal cavity has not been opened, is it not better to do the partial operation? The woman's chances for a longer lease of life were thereby not at all lessened.

THE PRESIDENT agreed with the previous speaker, and said that he did not counsel hysterectomy in cases where the disease had spread as much as in his second case. It was to be remembered, however, that the mortality from total extirpation was daily lessening, and he still, as formerly, was prepared to plead for the justifiability of the operation in properly selected cases. Fritsch had recently reported a series of sixty cases with only seven deaths, and of the fifty-three survivors, twenty-one had remained well from one to three years. Pawlick, of course, had reported from Braun's clinic a number of permanent cures after the high operation, but we must also remember that the course of the disease was very different when in the cervix from what it was when in the body of the uterus. From the researches of Ruge and Veit, it was proved that where the disease had extended up the cervical canal, total removal of the organ was necessary in order to offer a hope of cure. He felt, personally, that the operation was not a difficult one when properly chosen, and was not by any means, comparatively, a fatal one. He had operated five times with three recoveries, and his two deaths were due to the fact that he did not know the best way to operate then, those operations being performed with the patient in the lateral position. He would never undertake the operation without previous examination of the case under anesthesia.

DR. CHAMBERS stated that in his experience recurrence was less likely in women operated upon after the menopause.

DR. HUNTER said that he had noticed the same, and further that the disease ran a much less rapid course after the menopause.

DR. MCLEAN stated that this seemed to be the uniform rule, and that age certainly appeared to have an effect on the course of the disease.

DR. HANKS could also recall many cases in women who had passed the menopause where the progress of the disease was very slow.

THE PRESIDENT said that when a patient had passed the menopause and seemed to be holding her own, he was inclined to think that she had best be left alone. The more scraping, the more spreading. He was not, of course, referring to cases suitable for extirpation or high amputation, but to those in which all that could be hoped for from any treatment was palliative.

DR. JANVRIN said that a few years ago he was of the same opinion, but now, in all cases where there was much breaking down, he believed in thorough curetting followed by the Paquelin and perhaps two weeks later by the chloride of zinc. He believed that thus life was prolonged and made more comfortable.

He deprecated frequent curetting, but he was convinced of the utility of one thorough operation.

THE PRESIDENT reiterated that, unless the women were having hemorrhages, he would not curette, except in those instances in which he could remove a considerable amount of tissue, and afterward he would use the zinc chloride and not the cautery.

DR. JANVRIN further remarked that thoroughness was above all necessary, even if the risk was run of opening the peritoneal cavity, as had happened to him a number of times without bad result.

DR. HUNTER expressed himself as in agreement with Dr. Janvrin.

THE PRESIDENT said that the views he had expressed were rather those which he was in the habit of impressing on the gentlemen who attended his clinics than those to which he adhered strictly in practice. He deprecated in particular too frequent curetting.

THE NECESSITY FOR EARLY OPERATION UPON THE LACERATED CERVIX.

By CLEMENT CLEVELAND.—“Since Emmet published his first paper in 1869 upon this operation, the profession have been gradually learning to appreciate the full importance of his discovery, till now its advantages are generally recognized.

Notwithstanding this general acceptance of the importance of the operation, the *early* recognition and early repair of the lesion have not received the attention which, to my mind, is imperatively necessary.

A fact that I have been impressed with during an experience of ten years in the clinics of the Woman's Hospital is that the large majority of the women suffering from laceration apply for relief very late, long after the birth of the child that produced the injury.

In looking over the records of the Thursday clinic, I find, to go no farther back than three years, that the average time since last confinement for a patient to present herself for treatment was, in 1886, three years and eight months; in 1885, six years and one month; and in 1884, three years and one month. Of all the patients, there were but very few who applied for treatment under a year from their last confinement. I do not doubt that the same would be true of the clinics on the other five days of the week.

In the last one hundred cases of cervix operation in the hospital, the average length of time from last confinement to the day of operation was four years and nine months. Of course, this list embraces cases from all over the country, while the clinic patients are all from the city or neighborhood. Some of these women had borne several children, and in most of these the injury was doubtless caused by the birth of the first child. But in a majority, however, of these one hundred cases, the women had been sterile since the birth of their one child. If this should be taken as a fair indication of the condition of cases throughout the country, it is truly startling to think of the years of suffering women endure from this cause.

Now, as to the reasons for this long delay. One is, that being young and strong, many of these women do not begin to suffer at once, and, as the symptoms develop gradually, they have become more or less inured to them. But the chief reason lies at the door of the medical attendant, who should be the first one to know whether or not his patient has suffered any injury from confinement.

The statistics I have given above would show that there must be a widespread want of adequate appreciation of the consequences of laceration. I cannot believe that, after all that has been said and written upon the subject, ignorance can be largely held to account for it, and it would seem impossible that it could be due to neglect. But most of these women (I speak here of clinic patients), when told of the nature of the trouble and its cause, invariably blame the doctor. This is, of course, the old refrain; but may there not be more or less justice in it? In most cases, the doctor is blameless. He cannot prevent laceration; but by injudicious meddling, he can produce it. Moreover, he can always protect himself by stating to the husband or some member of the family that this injury may occur, and that he is powerless to prevent it. Then, again, after the lying-in, he should, by careful examination, determine as exactly as possible in what condition his patient has been left by her confinement. It is possible, sometimes, to make out laceration immediately after labor, but not always so, and, moreover, it is well known that lacerations sometimes heal of themselves, even without leaving cicatricial tissue. I hold that an examination of this kind should be considered second in importance only to the attendance at the confinement, and should be previously so understood. By making it, the physician may not only save his own reputation, but possibly his patient from a life of suffering.

I know that in many of these cases the doctor is engaged at a small fee for the confinement alone, and may not see his patient again. But this does not lessen his responsibility. If he does not feel himself competent, or, from the smallness of the fee, is unwilling to assume farther responsibility, he should at least tell his patient where she can receive the necessary attention. It is, in fact, a responsibility that common humanity forbids one to shirk, and a physician fails in his duty to his patient if he does not give her advice that may save her from ill-health. It is, again, not only the right course to pursue, but the most politic one. If injury has occurred, she will certainly find it out when she begins to suffer, and drifts into one of the dispensaries or clinics.

There are many of these cases, I am sorry to say, that cannot be put down as accidents of labor, but are due to a practice that is far more reprehensible than any of the sins of omission mentioned above. It is a practice among a certain class of men in this city, more avaricious than scrupulous, who, to save time and make a

small fee, do not hesitate to apply the forceps through a partially dilated os, and thus rupture the cervix every time they do so.

The usual result of laceration of the cervix is, as we know, subinvolution of the uterus. I think I may say this is the most important fact to consider in treating of this subject, for it has more to do with the ill-health of woman than any other pathological fact in the whole range of uterine disease.

Laceration, of itself, would not amount to so much if it were not for the arrest in the process of involution and from the train of disorders it entails. From the condition of subinvolution develops, by gradual tissue change, what has been variously named chronic enlargement, chronic metritis, areolar hyperplasia, etc. The term areolar hyperplasia, given to it by Dr. Thomas, explains the condition most accurately.

As this tissue change advances, other disorders gradually develop. The weight of the uterus gradually overcoming the natural supports, it falls into retroversion or retroflexion. In these positions, circulation is farther impeded, and congestion is superadded to aid in the changes already begun, and then will follow probably endometritis and erosion.

The symptoms accompanying these disorders are many and constant. They are pain in the back, pain in the pelvis and groins, bearing-down pains, irritability of rectum and bladder, leucorrhea, disordered menstruation, constant feeling of weariness and weakness, and general malaise.

Those of you who have had experience in the dispensaries and clinics of this city will bear me out when I say there is no more miserable being than the woman who presents herself with the symptoms characteristic of this lesion and its sequences.

As a cure for the disorders dependent upon laceration, Emmet's operation is justly famed.

The theory of its effect upon subinvolution is, that it arouses to new action the process of retrograde metamorphosis. It has its limitations, however, in producing this effect. It will not reduce the size and weight of the uterus in every case. In my own personal experience, I have found that the older the case, that is, the longer the time since the birth of the last child, the less is the likelihood that this result will follow, and I do not believe that after any decided amount of proliferation of connective tissue has taken place it is possible to produce any effect.

As it is impossible to fix a time beyond which operation will fail as a cure for subinvolution, the only sure course to pursue is to operate early.

Much has been said of the operation as a cure for the consequences of laceration, but very little consideration has been given to it as a means to prevent these consequences, and here, it seems to me, lies the greatest field for its usefulness.

Just how long the term subinvolution covers the condition of

the uterus, or at just what time the process of tissue change begins, which ends in areolar hyperplasia, it is impossible to say, though it is doubtless very early. For this reason, the surest time to operate would be, if it were practicable, immediately after confinement. The operation has been done at that time, but there are many reasons why it is never likely to become a popular procedure.

In my own judgment, the time to operate should be as soon as possible after the time has passed for complete involution of the uterus, and certainly within a very few months thereafter. The operation then is not a difficult one. There is no large amount of tissue to be removed, and certainly not the hard cicatricial masses that are often found later.

It has been objected to the early operation that the tissues are then too soft, and that in consequence the sutures are most likely to cut through, and render the condition worse than before. And this I deem a valid objection when the usual method is followed, for the tissues are so soft that it is necessary, in order to bring the edges closely together, to twist the wires tighter than the frail tissue can stand. What occurs is this: After operation, the tissue adjacent to the sutures becomes tumid from the necessary processes of repair, and continues so for a few days, till new channels of circulation are established. By the fourth day, notwithstanding the greatest care that may be taken in twisting, the wires will be found to have cut into the tissues. It is true that the tumefaction of tissues adjacent to the sutures will have subsided by the fourth day. But that does not prevent the tissue directly under the suture from being more or less strangulated, as it certainly is. If the suture is removed on the fifth day, the ulcerative process already set up by it will go no farther; but, if left till the ninth day, will, in the majority of cases, be found to have cut through. To remove the sutures on the fifth day would be to jeopardize the success of the operation. I have operated very early in a number of cases where the tissues were very soft, and have found, by a very simple procedure, I could prevent the wires from cutting through. This is to cut the wires on the fifth day without removing them. There is then binding power enough left to keep the parts together, though not enough to continue the ulcerative process. Since adopting this plan, I have never had a suture cut through.

There is, then, this to be said of the early operation, and it should outweigh all arguments against it: it not only cures the laceration and subinvolution, but prevents or cures displacements and the disorders that follow.

The points that I have wished to make clear in this paper are, that the operation has been in the past, and is now, in the majority of cases, postponed too long; that there is urgent need for immediate reform in this matter; that it is in the power of, and

is the duty of the profession to see that it is brought about, and chiefly that the operation should be used as a preventive rather than as a curative measure."

In the discussion of the paper, the **PRESIDENT** called attention to the great variability in the time which elapsed from the receipt of the lesion to the appearance of the symptoms. He asked for an expression of opinion as to how long a time elapsed, on the average.

DR. HUNTER said that in private practice a longer time elapsed, for the reason that the women were able to take care of themselves. He could testify, however, to the fact that in some cases of lacerated cervix there were no bad symptoms.

DR. EMERSON thought that there must be a great deal of uncertainty in answering the question, How long? Many a woman with lacerated cervix conceived again, and here it would obviously be impossible to say whether the laceration dated from the first or the second confinement.

THE PRESIDENT suggested that at each subsequent delivery there was often increase in the tear, and consequently an increase in the symptoms.

DR. HANKS said that a very important suggestion in the paper was that in reference to cutting the sutures on the fifth day, and leaving them until the ninth, only for the purpose of binding the surfaces together. He was satisfied that thus cutting of the tissues by the sutures would be prevented. In case cystic degeneration and hyperplasia of one lip of the cervix existed, he was convinced that the ordinary operation would not suffice. He was in the habit, in such cases, of taking a wedge out of the hyperplastic lip, uniting it, and then performing the operation for the repair of the lacerated cervix, as usual.

THE PRESIDENT remarked that this was practically the same procedure as that advocated by Hegar and Martin, and which he had shortly before described in this **JOURNAL**.

DR. HUNTER did not see the advantage of cutting the sutures on the fifth day. It was before this day that the cervix enlarged if at all, and it was then the sutures were liable to sink into the tissues. He thought that this sinking could be prevented, if the sutures were properly shouldered at the outset and not twisted too tightly.

DR. MURRAY claimed that the effect of laceration of the cervix was to cause inflammation at the side of the uterus, and that thence resulted the symptoms. In other words, the mere fact of laceration was not sufficient to cause complaint, except where the uterus was heavy and had sunk down to the floor of the pelvis, and there was consequent traction on the lacerated surfaces. Then it was that the operation was mainly indicated, in order in particular to make the uterus lighter by assisting involution.

DR. JANVRIN thought that the paper was of value, since it called for early operation. It was early operation which would cause avoidance of late symptoms. He advocated operating as soon as possible, within three to four months after delivery. He had thus operated a number of times and he was pleased with the results, particularly as he avoided the hypertrophy which would otherwise inevitably set in. He had never seen the sutures cut into the tissues, and he did not believe they would, if they were properly shouldered, sufficiently separated, and not twisted too tight.

DR. MORRILL thought that the main difficulty was to persuade the patient to an early operation at a time when absolutely no symptoms were present.

DR. MCLEAN said that we were entirely too willing to think that our patients would refuse. It was his habit to accept no confinement case unless it was distinctly understood that he was to have the right to examine the patient two months after delivery. Then if he found a laceration, he always advised repair, and he had never known his patient to object.

DR. MORRILL replied that there was a decided difference between persuading a patient to allow an examination and influencing her in favor of an operation.

DR. MARCY (of Boston), present by invitation, asked if he believed that proliferation of the connective tissue was the cause of subinvolution following laceration of the cervix, as was stated in the books. He said that he had made many sections, and had never found such proliferation. The change lies, he believed, in the muscle-cells.

THE PRESIDENT asked if he was to understand Dr. Marcy as referring to the hardness and density of an old lacerated cervix.

DR. MARCY replied in the affirmative, and said that whilst he might grant proliferation of this tissue in the cervix, he did not consider it as proved for the body of the uterus. He questioned if the cause of the symptoms did not reside in proliferation of the glandular tissue in the cervix.

THE PRESIDENT stated that he believed in repairing a lacerated cervix whenever symptoms were present. He did not think that the change in the cervix was purely the result of muscular enlargement. In the majority of instances, the glands were certainly diseased. Of late years he had frequently been amazed at the results he had obtained from the repair of the lacerated cervix, especially in neurasthenic women, in whom, as a last resort, he had operated. He had thus seen sciatic pains of long duration, and pains over the coccyx, and the various other neurotic symptoms accompanying general neurasthenia, disappear as if by magic. He was to-day much more a convert to Emmet's views in regard to reflex neuroses than formerly.

DR. PERRY asked if the rest in bed and general tonic treatment did not have considerable effect in the cure of such cases.

THE PRESIDENT replied that in the cases he had in mind rest in bed, as well as all other means, had been tried without avail. To Dr. Hunter's query as to whether he did not at the same time remove much hypertrophied tissue, the speaker said that in these instances he did not.

DR. FOWLER suggested that the moral effect of the operation probably had much to do with the cure, and the President agreed with him.

In closing the discussion, DR. CLEVELAND agreed with Dr. Hunter that tumefaction of the cervix did not extend much beyond the third day after operation, but he reiterated that he had found it of value to cut the sutures on the fifth day. He did not find it difficult to persuade his patients to submit to an early operation; in his hospital practice the difficulty was to find room for his cases.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Thursday, March 3d, 1887.

The President, THOMAS M. DRYSDALE, M.D., in the Chair.

DR. D. LONGAKER read a paper on the

TREATMENT OF LABOR IN CONTRACTED PELVES.¹

DR. HIRST differs with Dr. Longaker on two points: on the propriety of always applying the forceps in flat pelves before the head has become engaged, instead of turning and delivering by the breech; and on the propriety of applying the forceps over face and occiput in transverse positions of vertex presentations, as in this latter operation the bi-parietal diameter must be increased.

DR. H. A. KELLY agreed with Dr. Hirst. He considered the paper of Dr. Longaker's a very timely one, which, in all its leading features, he most heartily commended. It is certain that an intelligent use of the axis-traction principle is destined to revolutionize the treatment of labor in contracted pelves. In cases in which craniotomy has been the custom, axis-traction will save many lives. A few important rules should be borne in mind. First of all, Dr. Kelly would differ from the speaker most decidedly in one practice, and lay down the rule that "axis-traction" cannot be applied to the head above the brim. There is no axis above the brim, and any traction on the rod merely causes the head to rotate around its own axis, but can under no circumstances be efficient in inducing it to engage. Axis-traction applies to head engaged in the pelvis. Again, the ordinary use of this principle should be to *assist the pains*. Further, it is important in using Tarnier's forceps of this model to constantly attend to keeping parallel the shanks of the prehensile blades and the proximal end of the traction rod.

If the handles of the forceps rise during a traction, and it is felt by the examining finger that the head has not really advanced, then either the head has rotated in consequence of an eccentric grip or the forceps has slipped, and here lies the great difficulty of the Tarnier instrument. The frequency of this accident, together with some other considerations regarding the mechanical construction of the instrument, have demonstrated to my mind the fact that it is only approximately axis-traction. I have here a pair of forceps with which I delivered a dwarfed woman, two weeks ago, of a full-sized live female child through a three-inch conjugate. This pair of forceps was shown me first by Dr. Porak, of Hôpital St. Louis, Paris; and I believe that by them I attain the most perfect axis-traction which has yet been devised. The principle is applied in a very simple manner to any long forceps. Each of the four blades of the spoons is perforated with a small oval hole as near the centre of the oval of the spoon as possible.

¹ See page 468.

Two long tapes are taken, and one passed through the hole of one side, the four free ends are brought down under the forceps, and after their application, hang out at the vulva. These ends are brought through a hole at the extremity of a traction rod curved as ordinary traction rods, with the usual transverse handle at the outer extremity; this is then drawn up to the head, and the ends of the tapes fastened on the rod at the apex of the angle where the vaginal turns down into the perineal curve. The advantages of this forceps are many. 1st. The application is extremely simple. 2d. It can be applied to any forceps; the Tarnier cannot be, as it is only suitable for narrow-heeled instruments. 3d. The child's head is grasped by the centre of its figure owing to the position of the attachment of the tapes. 4th. This same factor renders unnecessary the screws which are so dangerous in Tarnier's forceps, as the traction does not tend to force the blades apart, but approximates them. 5th. The perfectly movable connection between forceps and rod, *i. e.*, the tapes, allow the head to flex and follow the curve of the pelvic canal.

I have used Tarnier rods and the Poulet forceps on the same patient several times, and my experience accords with that of Dr. Porak, where the Tarnier rods fail and the forceps slip, the Poulet forceps hold and work easily.

An interesting incident of a short time since shows well the comparative value of axis-traction. I had described my Poulet forceps to a friend who has a large obstetric practice. He soon called me out with a note, "bring your French forceps." I found the head well engaged but wedged tight. He had made many well-directed vigorous efforts with his own forceps, and finally gave up in despair, producing no effect. I applied the Poulet forceps, and with a moderate traction on the rod the head moved gently and steadily until it came directly to the outlet without apparent effort. We were both enthusiastic. "No ordinary forceps in the world could have accomplished that." Mr. Gemrig, of this city, keeps the rods on hand; they are the only essential part of the instrument.

DR. BERNARDY had had a patient, whose conjugate measured less than three inches, under his care in several labors. The first child was delivered alive by means of Wallace's forceps. The second child, partial brow presentation, was delivered after five hours' pulling with Wallace's forceps, Hodge's having been first tried and abandoned on account of slipping. Weight of child, twelve and three-quarter pounds. In the third labor, a dead child was delivered by version, then followed two successive craniotomies. In the sixth labor, being called in consultation, he delivered a twelve-pound living child in a vertex posterior position in twenty minutes, by means of Tarnier's forceps. The Tarnier's forceps have no superior in high cases; when the head is low down in the cavity, they are inferior to the ordinary forceps.

DR. CLEEMANN.—There is one feature of Tarnier's forceps which appears to be barbarous and unscientific, and I see this feature is retained in the instrument shown. I allude to the device of the screw which is intended, by clamping the blades against the child's head, to prevent the slipping of the instrument. Slipping should be prevented by the proper adjustment of the blades to the child's head and the moderate pressure induced through traction. To accomplish such adjustment in extreme cases, a pelvic curve

should be given to the shank of the instrument; such adjustment cannot with safety be replaced by the mechanical pressure induced by the screw. (AMER. JOUR. OBST., April, 1878, p. 341 et seq.)

DR. LONGAKER had not had time to read Dr. Winter's article in the original, *Zeitschrift für Geb.*, but gained his information from an editorial in the *Med. News*, which states that an expectant plan of treatment and forceps are advised for primiparous, and early version for multiparous.

He still thinks the occipito-frontal application of the blades does not appreciably increase the bi-parietal and bi-temporal diameters of the fetal head. It may increase the vertical diameters, as the cervico-bregmatic and sub-occipito-bregmatic. A simple experiment on the manikin of Budin demonstrated the truth of this proposition. A full-term fetus, still-born, was placed in position at the brim, the sacrum being thrown forward so as to make the conjugate measure three inches. With the axis-traction forceps the relative disproportion between the head and the pelvis, which was considerable, was easily overcome. With blades having a sufficiently marked cephalic curve, the compression need be but slight.

There seems to be some misconception as to what is meant by the head being at the brim of the pelvis. The head is at the brim until the greatest transverse diameter, the bi-parietal, has passed the plane of the superior strait. With a head entirely above the superior strait, the use of any forceps would hardly be appropriate. If fixation of the head could not be secured, version would be the best measure.

He did not see how traction exerted by means of tapes could be more efficient than with stiff rods.

The fixation screw is a necessity, there being no free hand to make the necessary compression by the handles. Moreover, it is not objectionable. Continuous pressure is avoided by relaxing the pressure in the intervals. This was one of the chief objections urged by the late Albert H. Smith.

A little reflection and application of well-recognized principles would dictate the proper method of applying traction. Simpler axis-traction forceps have been devised by Breus and by Braun.

As version is in almost universal favor in Germany and Vienna, these instruments have little chance; they are scarcely used there.

DR. BARTON C. HIRST read a paper on

THE DEATH RATE OF LYING-IN HOSPITALS IN THE UNITED STATES.

It will be published in full in the *Medical News*. Of 19,902 women delivered in thirty-four hospitals during the years 1880 to 1885, distributed among nineteen large cities in this country, 2.59 per cent died after child-birth. This death rate compares very unfavorably with the statistics of hospitals in England, Germany, Vienna, and Paris, and is also more than twice as great as the death rate of general practice in the cities of this country, which is about one per cent. 1.5 per cent of the women confined should be the maximum death rate in lying-in hospitals, and to secure this result, those institutions should be subjected to state or municipal supervision.

DR. BALDY thought that, in comparing American lying-in-hospital reports with those of foreign countries, especially those of Germany, we would not find the former to hold an inferior position. According to Dr. Dohné's statistics, the average per-cent mortality in Germany, before antiseptics were introduced, was 3.4 per cent. Comparing this with the 2.5 per cent mortality, as given by Dr. Hirst for American hospitals, we stand about even, our apparent advantage being due to the fact that their 3.4 per cent was without any antiseptic, our 2.5 per cent included a few years of antiseptics. Comparing the years of complete antiseptics, we still hold our own, Dr. Dohné giving the German an average mortality of 1.37 per cent, Dr. Hirst giving us a mortality of 1.37 per cent for the Boston Lying-in-Charity, and 1.52 per cent for Blockley Almshouse, Philadelphia, with a mortality of less than one per cent for the past year in the last-named institution. The mortality of private practice and hospitals scarcely admits of comparison.

Dr. Baldy considers modern midwifery too meddlesome. The practice of introducing the examining finger and manipulating the patient every fifteen or twenty minutes is a great source of danger. This is evident, on reference to Dr. Dohné's statistics. In hospitals, even under antiseptics, where students of medicine are taught, the per cent mortality is given of 1.90; where midwives are trained, 1.13 per cent; where there is no teaching whatever, 0.56 per cent.

Two great sources of puerperal fever, so-called, are lacerations of the soft parts and diseased appendages. If the laceration were always dealt with primarily, and the appendages examined and dealt with as required, our mortality would drop to almost nothing. While he was an interne at Blockley Almshouse, the vast majority of women delivered suffered from perineal tears, and in every one of these cases there was a rise of temperature that was called puerperal fever. There was no attempt at closure and no antiseptic precautions. A patient is now under his care who was delivered a month ago of a stillborn child. On the third day, she experienced a rise in temperature, with all the signs of a puerperal fever; an examination disclosed a pyo-salpinx which will have to be removed to save her life.

DR. HIRST admitted that before the introduction of antiseptics the statistics of German hospitals were worse than those of our hospitals at the present time.

PERINEORRHAPHY AS PERFORMED BY DR. W. GILL WYLIE.

By DR. HOWARD A. PARDEE.—The interest shown in the paper describing Dr. Emmet's operation for the restoration of the perineum, read at the February meeting, led me to think that a brief description of the operation devised by Dr. Wylie might also be acceptable to the Society.

According to a paper by Dr. Wylie, contributed to the *N. Y. Medical Record*, March, 1885, he had devised the operation about five years previously. It was first performed before a class, so far as I know, in a ward in Bellevue Hospital, New York, in the winter of 1882-83. It is the operation, as I then became acquainted with it, that I shall describe, for it is the one I have since used

and am most familiar with. A letter received from Dr. Wylie a few days ago tells me that he still uses the same operation with little, if any, modification. It is performed as follows: The usual preparation by laxatives, hot douches, and glycerin tampons having been carried out, the bowels are cleaned by an enema an hour or two before the time for operation. Just before the patient is etherized, a hot vaginal douche of corrosive sublimate, 1 to 5,000, or carbolic acid, 1 to 40, is given. The patient is placed on her back, the buttocks as near the edge of the table as possible, with the thighs strongly flexed and the knees held apart by an assistant on either side. The labia are drawn apart as fully as possible without straining, and are held by the assistants. The caruncles marking the posterior border of the vaginal orifice are found, and mark the limit of the denudation upward or toward the pubes. A tenaculum is hooked into the crest of the rectocele, which is drawn down, and an examination is made with the finger to find at what point the tissues on either side of it are put on the stretch by the traction. This point, or one a very little above it, is made the limit of denudation backwards into the vagina. It is well to mark it by snipping off a particle of the mucous membrane on either side. For the denudation a pair of moderately sharp-pointed scissors, curved on the flat, is the most convenient instrument. Following Dr. Wylie's example, I have always used a pair of good dissecting forceps to catch the tissues, instead of the tenaculum. Commencing from below, a strip of mucous membrane, as wide as can be conveniently cut, is snipped off, following the line of junction of the skin and mucous membrane from the level of the inferior caruncle on one side to the same level on the other. We then denude all the posterior surface of the vagina up to this level till we reach the beginning of the sulci running on either side of the rectocele. The part of the operation requiring the greatest judgment has now come. Our object is to unite the vaginal walls above the sulcus on one side with the corresponding portion of the vaginal wall on the other side, so obliterating the sulci and forcing back the rectocele. If we carry our denudation too high, we shall find it difficult to bring the two sides together without undue tension. If we are too timid, our support will be insufficient and the operation will be but a partial success. The proper level having been determined, we continue the denudation upwards till we reach the points in the vagina which we marked out as the limits of tension from the apex of the rectocele. This will usually be about one and a half or two inches from the orifice. In denuding this portion of the vagina, we still work from side to side, carrying the strip of mucous membrane down into the sulcus, up over the rectocele, down into the other sulcus, and up to the level we have marked on the other side. In doing this, we should not cut very deeply and preserve as much as possible of the muscular substance of the wall of the vagina over the

rectocele; but afterwards we should go over our work in the sulci, removing all tissue till we come to the firm fibrous external sheath of the vagina. In this way, we hope to preserve a firm muscular coat over the rectocele. When we are through, the denuded surface will be nearly square, or, if the rectocele be very large, a parallelogram, the greatest length being transverse to the axis of the vagina. All bleeding should be controlled preferably by pressure and tension; but, if necessary, catgut ligatures may be used and the parts washed thoroughly with some efficient antiseptic. The suture should now be introduced. The first three or four are placed as in the old "butterfly" operation, entering about a quarter of an inch outside the line of junction of the skin and mucous membrane, passing backward and downward, and then upward and forward, emerging on the other side at a point corresponding to the point at which they entered. The last one of these external sutures should be entered a little above the level of the caruncle which marked the limit of denudation upward. The remaining sutures, four or five in number, are usually entered in the mucous membrane a little above the line of denudation, passed down below the angle formed by the sulcus, and up to the crest of the rectocele. It is best to bring the needle through at this point, and reintroduce it at the same point; it then goes down the other side of the rectocele, round the angle of the sulcus, and up the opposite vaginal wall, till it emerges above the line of denudation opposite the point where it entered on the other side. This may seem to be a difficult stitch, but with a straight needle, a good needle-holder, and the index-finger of the left hand in the rectum, while the thumb is in the vagina, it is made without much trouble. The greatest care should be taken that the needle is buried when it passes under the angle of the sulcus. When the sutures are placed, and before they are tightened, the sphincter ani should be thoroughly stretched. This, to a certain extent, relieves the tension on the sutures and at least adds largely to the comfort of the patient by preventing straining at stool. Another thorough cleansing of the parts should now be done, and the sutures should be tightened from below upward. The urine is not drawn, unless the patient is unable to pass it; the parts are washed after urination.

DR. PARISH had for years performed a similar operation, but carried his denudation farther up the vagina, and thus avoids the formation of a pocket-like place in which discharges accumulate. He has found it in some cases a cure for constipation.

DR. BALDY did not think Dr. Pardee understood Emmet's operation.

DR. PRICE prefers Emmet's operation.

DR. H. A. KELLY thought this an unsatisfactory modification.

DR. PARDEE was well acquainted with Emmet's operation as performed two and a half years ago. The obliteration of the rectocele in that operation was by drawing down a stretched wall,

leaving it thin over the rectocele. In his experience, opium had not been needed after the operation to control pain. The external stitches are needed to secure a neat external healing.

DR. JOSEPH PRICE exhibited a specimen of

DOUBLE PYO-SALPINX WITH CO-EXISTING OVARIAN CYSTOMA ON BOTH SIDES.

Mrs. H., æt. 30 years, two children, labors normal, complains of irregular and profuse bleeding, constant pelvic pain, greatest on left side. General health poor. Examination revealed a small fibroid on posterior wall of the uterus, a cyst on the right side extending high up, inflammatory masses laterally. *Operation:* Section; the appendages on both sides were distended by pus, and generally adherent: left ovary cystic and suppurating, and matted to the pavilion of the tube and the sigmoid flexure. The right ovary was cystic, and adherent to the vermiform appendix. The pelvis was filled with an irregular conglomeration of cysts and pus-tubes, intimately adherent to pelvic organs, and overlying all this were the bladder and omentum also firmly adherent. The omentum was perforated at two points, and the mass was removed by careful dissection. A glass drainage-tube was used, recovery was rapid and perfect; no opium, no catheter; tube out on fourth day; stitches out on seventh day.

DR. W. H. PARISH reported a

PORRO-MUELLER OPERATION.¹

DR. R. P. HARRIS remarked that the Cesarean operation has been performed in the United States in cases of impaction of the fetus in a transverse position twelve times. In eleven cases, the fetus was dead. In the twelfth it was saved, but the operation was believed to have been uncalled for by a physician who performed laparotomy with success after the woman had ruptured her uterus in her next labor. The pelvis had been computed to have a conjugate and a transverse diameter of three inches. In one other of the twelve cases, the pelvis was deformed, and the woman saved. The arm was protruding in seven cases, five of which recovered. In two, the shoulder presented; one saved; and in three the presenting part is not named. Of the twelve cases, nine, or seventy-five per cent, recovered. Of the three cases lost, one was ninety-six hours in labor; three days in charge of a midwife; another was twenty-six hours under a midwife, who had given ergot and ruptured the membranes; and the third had been long in labor, but time not stated. Her death was caused by fright and exhaustion; she rose from her bed to defend her mother against her husband, who had come home drunk on the third day. He knew of but one case of impaction in Europe in which the Porro operation was performed, but in this the pelvis was deformed. The operation was by Fehling, of Stuttgart, and the woman was saved. Putridity of the fetus may require the removal of the uterus in a case of impaction. One woman was saved without its removal in the United States after seven, and

¹ See original articles, p. 503.

another after ten days of labor, by uterine suturing to prevent escape of fluid; but it is safer to remove the organ where there is danger of poisoning, and particularly where the patient appears to be already threatened with it. In the Porro case of Candido Ramello, of Turin, the woman had been six days in labor, the fetus was putrid, and the mother in great danger of septicemia. The removal of her uterus with its contents was followed by an improvement of her symptoms, and she recovered.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, January 21st, 1887.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. CHARLES T. PARKES reported

A CASE OF INTERSTITIAL PREGNANCY, WITH REMOVAL OF THE PRODUCT OF CONCEPTION THROUGH THE UTERINE CAVITY.

The specimen was taken from a lady, 33 years of age, who, seven years ago, was delivered of a child at full term. A year after that she was taken with hemorrhage, and had quite a severe bleeding, every month or second month for two years. Some time after her pregnancy, she was operated upon for laceration of the cervix, but the operation had little effect upon the hemorrhage. Two years ago she again became pregnant, and was delivered at the proper time. The lady came under my charge last September for hemorrhage from the uterus. On examination I found a globular mass in the lower portion of the abdomen, as large as two fists, very hard and tense. When I felt it through the abdominal walls, my impression was that it was a fibroid growth. Upon digital examination, I found the cervix dilated sufficiently to admit the finger very readily, which went over the surface of a smooth mass in the uterine cavity. This led me to think that it was a fibroid tumor with a broad base, probably a submucous tumor, which gave rise to the hemorrhage. On that supposition I placed her on the ergot treatment and kept it up for a week, twenty drops of the fluid extract every six hours. This gave rise to such severe attacks of pain that the patient could not bear the treatment any longer, but it had the effect of diminishing the flow of blood and increasing the dilatation of the cervix. I took pity upon her on account of the pain and gave a couple of hypodermic injections of morphine, when the pain ceased, the cervix

began to contract again, and soon reached its normal size, and the patient recovered from the acuteness of the disturbance, but the hemorrhage still continued, accompanied with a flow of muco-pus. I attended her from the 16th of September until the 14th of October; as she was getting along pretty well, I supposed the action of the ergot would gradually force this mass down so that it could be removed. My visits ceased, and I heard nothing more from the patient, except an occasional report that she was getting along in the same way, until the 10th of December, when her husband came into my office and showed me a little piece of bone, or a piece of hard substance that looked like a bone, which he said his wife had picked off the napkin. It had the appearance of fetal cranial bone. He asked me what it meant, and I told him I could not say, but would see his wife. On inquiry, I found that the flow of blood had ceased, but the flow of pus had increased, and occasionally there was extruded a piece of this bony substance. On digital examination, I discovered the os and cervix filled with particles of this bony substance, and, after removing them, I found it impossible to introduce my finger into the cervix. The external tumor was reduced considerably in size, and was low down in the pelvis, and could be felt through the anterior vaginal wall. I then decided to dilate the cervix. I introduced as many tupelo tents as I could get into the cervix—at first but two of fair size—to their full length, and allowed them to remain there over night, when I removed them and introduced four more. That evening I removed them, and the cervix was dilated so that I could easily introduce my finger. As I had examined the uterus with the sound at my first visit, and it went around this mass to its full length, I supposed I had nothing but a fibroid to deal with. When I had dilated the cervix with these tupelo tents, I found I could not get at the mass of the growth, my finger going into the cavity of the uterus. At the distance of one joint and a half inside the cervix, I found a little opening, and projecting through this opening—about as large as the end of a pencil—were some of these particles of bone. Then the query arose, how was I to get into this cavity, and what was it? A double uterus, with multiple pregnancy at the last conception—one delivered and the other retained? I was at a loss to know what it was, but finally concluded it to be an intra-mural pregnancy. Then I thought of using the tents to increase the dilatation, but was troubled with the fear that I should have a severe septicemia come on as soon as this outside cavity was opened to air. But I was convinced that, unless I tried to do something, the patient would pass out of my hands; so I decided to keep on with dilatation. On the 20th of December I began introducing the tents, and within two or three days after their removal, the cervix was again contracted so that it would not admit the finger. I introduced the tents again, and met the same difficulty in exposing the mass. The thought struck

me that if I could not get the large body out of the small opening, I could diminish the size of the mass; so I introduced small forceps into this opening, and took it away piecemeal. All this time I had the entire uterus under my command, because it was an easy matter to bring the cervix down to the vulvar orifice. On the 24th, I introduced tents and dilated it, so that I could introduce two fingers very readily, and finally got one of my fingers into the opening in which this body (indicating the specimen) was found. I then began to separate it and pull it away, getting hold of it with strong forceps. Sometimes I succeeded in bringing away a large mass of flesh, which looked exactly like that of a macerated fetus, the skin macerated and parchment-like. This was continued up to the 30th. Passing over the New Year, and allowing the patient to rest without interference, on January 9th I introduced four tupelo tents, a little longer than the ordinary, and fortunately succeeded in getting one or two into the opening in which the body was found; so, when I removed them that evening, I was enabled to bring away the entire mass, and pass the finger into the cavity afterwards. It was very irregular, as though the uterine tissues had been forced into the irregularities of the foreign body. Since that time the patient has improved, the bleeding has ceased, the uterus has diminished in size, and she is up and around the house. I have had all parts of this specimen examined under the microscope. The fleshy mass shows connective tissue, muscular fibres, blood-vessels, and hairs. The osseous material shows all the characteristics of fetal bone.

THE PRESIDENT.—Was there a history that would lead you to suppose, that at any time during her invalidism there was a pregnancy, or a pelvic hematocoele, or anything of that kind?

DR. PARKES.—At the time of her last pregnancy, she was very large and yet was delivered of a child that weighed but six pounds. Her abdomen was very large for some time after the delivery of this child. Again, there is a history several years back, of a period when menstruation ceased, and she supposed she was pregnant, but nothing came of it.

DR. W. W. JAGGARD said the interesting specimen presented by Dr. Parkes was a typical lithopedion—a calcareous capsule, containing the fetal structures infiltrated with lime salts.

He thought the diagnosis of interstitial pregnancy highly probable. It was impossible to make a positive diagnosis without a post-mortem examination of the maternal organs. Carl Braun ("Lehrb. d. g. Gynaek.," 1831, p. 128) was responsible for the statement that the formation of a lithopedion occurred only in case of extrauterine pregnancy. Spiegelberg ("Lehrb. d. Geburtshülfe," 1882, p. 342), however, indicates that this proposition is too general. The formation of a uterine lithopedion occurs infrequently in the human female, but is not unusual in ewes. Koeberlé (*Gaz. hebdom.*, No. 34, 1866) extracted by abdominal section a lithopedion from the rudimentary horn of a uterus bicornis.

The formation of a lithopedion, therefore, was not a reliable sign in the differential diagnosis between uterine and extrauterine pregnancy.

DR. JOHN BARTLETT read a paper entitled,

A CASE OF OBSTETRICS, WITH REMARKS.

Recently I was requested to assist a younger physician in a case of midwifery. Dr. H. had been called some hours before my coming. He found a healthy, well-built woman in labor with her eighth child; hitherto she had had no difficulty in her confinements. She had been in labor some hours, and, although the pains were very strong, the os fully dilated, and the head presenting, no progress had been made. A midwife had been in attendance. The doctor attempted to use Elliot's forceps, but, because of the high and abnormal position of the head above the pelvic brim, he had desisted from his purpose. Upon examination, I found the os widely dilated, the crown of the head presenting. By introducing the hand into the vagina, my fingers directed toward the left sacro-iliac synchondrosis encountered and passed slightly beyond an extremity of the head-ovoid which I supposed to be the occipital protuberance, but near it was so distinct a fontanelle as to lead me to examine the opposite extremity of the head. Passing the hand deeply behind the left foramen ovale and well above the pubes, the fingers embraced the occiput; sweeping well backward again over the side of the head they traversed the temporal region till the ear was reached and carefully outlined. Still farther backward the fingers passed over the frontal eminences which had at first been mistaken for the occipital protuberance. The head was floating above the pelvic brim; the frontal region sinking somewhat below the plane of the superior strait. The crown of the head rested gently upon the pubes, while the occiput rested so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without. Having determined the position of the head, I proceeded to inquire the cause of its detention; for it did not impinge with force upon any portion of the circumference of the brim. Passing the fingers along the side of the head I felt for the cord around the neck. A coil of cord was immediately encountered and pressing a little farther upward a second, third, and fourth coil were detected. I felt authorized to announce to Dr. H., as the cause of the dystocia, the suspension of the head above the brim by the cord shortened by four coils about the neck. The fingers were passed about the occiput and it was pressed downward and backward, throwing the forehead backward and upward above the brim, and bringing the occiput slightly into the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre.

The head was now seized with a well-curved Simpson's forceps, and readily brought down. The expectation was, as soon as the head was delivered, to place quickly two clamp forceps on the cord and cut it between these, in order to escape the embarrassment which the several coils about the neck might occasion. The

first loop, however, was easily drawn over the head, the other coils were then readily released. The child which weighed eleven pounds breathed at once, seeming but little affected by the unnatural position of the funis. The length of the cord was forty-six inches.

It may be considered what other line of practice might have been pursued. It might have been practicable to disengage the cord from the neck, and in this way remove the cause of the dystocia. To this practice was the serious objection that with the head floating above the brim, the liberation of such a length of cord so near the pelvic inlet might have led to its prolapse. . . .

In connection with this case, I propose to make some comments upon the mode of determining the position of the head in labor. From time immemorial, it has been the custom of teachers to describe with particularity how the position of the head may be determined by the tips of the fingers by means of the sutures and fontanelles.

Whatever skill or tact others may be endowed with, or may have acquired in such methods, for myself I wish emphatically to declare that such examinations are often entirely insufficient to furnish me with the desired information; and that now, after years of careful observation, I am not infrequently at a loss to determine the position of the head after the usual examination per vaginam, and that I am occasionally led into an error in this regard only to be dissipated by the birth of the head. Nor am I alone in this want of capacity; a number of experienced obstetricians, with whom I have conversed on this subject, have expressed like uncertainty in determining the position of the head by the means mentioned.

The veteran John S. Clark, the most experienced practitioner in obstetrics that I have ever met, has on several occasions denounced the directions above referred to, and so often repeated in the text-books, as a delusion and a snare. The late Dr. Grosbeck, after fifty years of obstetrical practice, declared that he never could rely upon determining the position of the head by the methods under consideration. And the painstaking, accurate, and deliberate surgeon, Dr. R. G. Bogue, does not boast of much better success. One of the most learned obstetricians in this city, an able lecturer on midwifery, once assured me that while he repeated fluently enough to his classes the stereotyped methods of determining the position of the head by the fontanelles and sutures, he often found, as the head passed the vulva, that the "data" furnished by the tips of the fingers had led him into gross error. While in many cases the position of the head may be easily and certainly recognized by the ordinary methods, it is yet certain that in other instances, more especially when difficulties make a knowledge of the head's position particularly desirable, nothing positive as to its attitude can be made out by the average

practitioner, by feeling in the usual way for sutures and fontanelles.

Nor is this appreciation of the difficulty of determining the head's situation new. That admirable obstetrician, William Smellie, who was one of the first to appreciate the desirability of knowing the head's position, and who perhaps earlier than any other accoucheur taught how such knowledge could be acquired, was often foiled in his efforts to ascertain the head's true situation. He writes in his "Observations" as follows: "The head, though low down, was so swelled that I could not distinguish its position, for I could feel neither suture, ear, nor back part of the head." And in another place he writes, "I could not in any way, by the sutures or otherwise, distinguish the right situation of the head. I introduced the forceps at random by the sides of the pelvis." And again, "The head was so large and compressed into such a lengthened form that I could not push up my finger at the pubes to feel the ear or neck; neither could I distinguish the situation of the head by the sutures, because the scalp was so swelled; nor could I move the head upwards in order to feel the upper parts, such as the ear, neck or face." And also, "I felt something like the vertex down at the lower part of the pelvis, but we were all mistaken as to the position of the head. I thought the forehead toward the sacrum. I mistook the posterior for the anterior fontanelle. I was surprised to see the (supposed) occiput come along under the pubes, not with hair, but bald and smooth. We had all been mistaken as to the position."

How then in cases requiring a knowledge of the head's position is such information to be obtained? I know no better way of answering this question than by making reference to the practice of Smellie. Please to note the thorough methods by which he satisfied himself of the size or position of the head in the several cases here cited. "I knew the child was small because I passed my finger all around the head." And, "I perceived that the head was not large, because I could easily introduce my finger all around the lower part of it." Desiring to ascertain the position he says, "I scooped up the head above the brim of the pelvis, and as I slipped my hand flattened between the sacrum and the child's head, I felt with my fingers the back part of the neck" (determining the position of the occiput). And again, "I turned the back of my hand down towards the sacrum and raised or scooped the head gently to the upper part of the pelvis; and now with my fingers I felt the posterior part of the neck, and distinguished that the pelvis was not distorted. Thus informed, I introduced the blade of the forceps," etc. In reference to another case he says, "Being foiled in delivering the head, which was not large, after having properly applied the forceps I disengaged the instrument, and raising the head again (out of the pelvis) found the difficulty was owing to the left shoulder being over the pubes.

I got hold of the arm, brought it down, and again fixed the forceps and delivered, pulling gently at the hand."

From these extracts it will be seen that Dr. Smellie did not content himself with vaguely touching such portions of the presenting part as might be reached by the introduction of one or two fingers, but that he introduced deeply the half hand, or the whole hand, and passed the fingers into every available space; not hesitating, when necessary and practicable, to lift the head above the brim that he might get his finger about its salient points, as the ear, the face, the back of the neck. It is noteworthy that it is only when circumstances prevent the head being thus "traced," that Smellie recommends that "the observation" be taken from the fontanelles and sutures. In the case which is the basis of this paper, the vaginal examination was made after Smellie's method. The steps of the procedure have been given in detail with the purpose of illustrating his teachings.

DR. PHILIP ADOLPHUS.—The diagnosis of the position of the child in head presentations by means of sutures and fontanelles is not as difficult to the physician, who has been in attendance during a case of labor, as has been stated this evening. The gradual descent of the head into the pelvis will permit the recognition of the landmarks by *repeated* examination with the finger.

In diagnostic obstetric investigations, palpation of the abdomen, the examination of the child's head and the pelvis of the mother by bimanual palpation, should be conducted on the same principles as in gynecological cases. An empty bladder is also essential to a successful diagnosis.

Such an examination will insure the recognition of the position of the child's head, and other necessary information.

The consulting physician who encounters a tender abdomen, tumefied soft parts, and a swelled scalp in an exhausted patient, has a far more difficult task. The same rules, together with the introduction of the hand as far up as is required, under anesthesia, will give him the necessary information.

The experience of the eminent writer of this paper, as well as that of others, shows plainly that a refinement of diagnosis is not absolutely essential. Many cases of labor are completed in which the diagnosis of the position of the head has not been ascertained by its sutures and fontanelles. Moreover, cases which require delivery by forceps are frequently skilfully handled when the operator has not been enabled to ascertain the position of the head. We explain this by stating that the mechanical adaptation of the child's head to the bones of the pelvis is perfect; sooner or later, the child's head, if *not disproportionate in size to the pelvis*, will accommodate itself to its configuration, provided other obstacles in its path have been removed by the attendant. We state, also, that the position of the head does not determine the position of the blades of the forceps, but the position of the blades is always determined by the anatomy of the mother. Therefore, the forceps should be applied along the sides of the pelvis, and their pelvic curves should correspond to the curved axis of the pelvis.

Their introduction is governed by the direction of the obstetric

canal, the globular head of the child, and the cranial and pelvic curves of the instrument." The direction of the obstetric canal in a woman in labor is not the osseous pelvis merely, but the pelvis covered with soft parts, whose terminal outlet is not at the point of the coccyx, but at the anterior commissure of a greatly distended perineum, a distance of ten to twelve inches during labor.

The blade of long, double curved forceps—having both the cephalic and the pelvic curves—is guided into the pelvis by the fingers, and insinuates itself between the head and the soft parts of the mother. To facilitate the introduction of the second blade, the first blade is gently elevated and rotated as much in a lateral direction as possible. The same manipulation is repeated with the second blade. In many cases, the elevation of the blades and their gradual rotation for the purpose of locking them, adjust the blades of the forceps to the head of the fetus, as they have already adjusted themselves to the mother's pelvis; and now traction, some compression, and slight leverage (if necessary) complete the delivery of the child, *which will rotate spontaneously within its blades* during traction, owing to the anterior and posterior planes on either side of the cavity, and the resistance of the floor of the pelvis.

It is best that the exact position of the head should be known, but such knowledge is not essential to its safe extraction; on the contrary, it is not correct to apply the forceps to the sides of the fetal head when its position is oblique or transverse, for if its pelvic curves are twisted, injury must be inflicted on the mother.

DR. W. W. JAGGARD.—I have listened to the reading of Dr. Bartlett's scholarly paper with interest and pleasure. His allusions to the wisdom of the ancients are always timely and judicious, notwithstanding the fact that, in general, the results of modern observation and experience are entitled to a higher degree of consideration. I hope to be pardoned for making one or two criticisms.

The diagnosis of dystocia, by reason of a short cord, is not adequately established by the clinical history of the case. The ease with which the vertex engaged after manipulation, and descended after application of the forceps, the absolute length of the cord, forty-six inches—even with four loose coils around the neck, not relatively short—the condition of the child when born, these are facts which do not indicate that the length of the cord constituted a mechanical hindrance to the progress of labor. The author has quoted Spiegelberg, who is of the opinion that shortness of the cord constitutes a mechanical hindrance only where the presenting part reaches the lower portion of the parturient canal. The only method of determining with certainty, in the concrete case, that shortness of the cord is acting as a mechanical obstacle, consists in the introduction of the fingers, direct contact with the cord, and the detection of the abnormal tension. If the case related by Dr. Bartlett was one of dystocia, and if the "occiput projected so far forward over the pubic bones as to be distinctly appreciable to sight and touch from without," does it not seem a plausible hypothesis that the child was presenting slightly obliquely, and that the operator performed cephalic version? "The fingers were passed about the occiput, and it was pressed downward and backward, throwing the forehead backward and above the brim, and bringing the occiput slightly into

the pelvis, the pains meanwhile having a decided effect in assisting the manœuvre."

In treating of obstetrical diagnosis in general, Dr. Bartlett does not mention the signs derived from inspection, auscultation, and particularly *abdominal palpation*. I am induced to call attention to this topic for the reason that, notwithstanding the writings of Kucher, Mundé, and Richardson, the recognition of the value of abdominal palpation in obstetrical diagnosis in the best recent text-books, and the translation of Pinard's treatise, by Dr. L. E. Neale, of Baltimore, still many practitioners affect to disregard the paramount importance of the method. Litzmann (1865), Halbertsma (1870), Winckel (1878), Crédé ("Gesunde und kranke Wöchnerinnen," Leipzig, 1886, p. 80 et seq.), in order to prevent the infection of parturient women in their respective lying-in hospitals, have omitted all examinations per vaginam, for months at a time, with most gratifying results. Under these conditions, external examination has proved perfectly adequate in the diagnosis of presentation and position.

I confess to a feeling of decided surprise upon hearing that a medical man, with the average degree of tactile sensibility and even moderate experience, should necessarily have difficulty in the diagnosis of position, by indagation, in normal vertex presentations, after engagement, before the formation of the caput succedaneum—the os externum being dilated or dilatable, the bag of waters intact or ruptured. I am under the impression that failure to make an accurate diagnosis, by examination per vaginam, under the conditions specified, is due in very many cases to inattention. It is an obstetrical maxim of importance that both fontanelles and their sutures should be felt before making a diagnosis, when vaginal touch is exclusively employed. When an extensive caput succedaneum has formed, or ossification of the fetal skull is advanced, or in case of subnormal tactile sensibility on the part of the accoucheur, no absolute contra-indication to the introduction of the half hand exists. In forceps cases, a correct diagnosis of the position of the vertex must be made, since that instrument ought to be applied first with reference to the pelvic walls, and then adapted to the child's head, before the exercise of its most important, and, as I believe, exclusive, function of traction.

DR. EDWARD WARREN SAWYER.—I wish to speak of an interesting experience which occurred to me. A gentleman who had carefully translated the book alluded to called me in consultation to assist him. He had, by means of bimanual palpation, diagnosed a presentation of the vertex, but on my examination I found the buttocks were presenting. I think in most cases abdominal palpation is of no service whatever to the majority of practitioners. I have experienced the same difficulty that Dr. Bartlett has so graphically described in recognizing the position of the head by the introduction of the finger into the vagina. And after a long practice, so uncertain am I concerning the position that I never think of applying forceps until I have introduced enough of my hand to recognize some part of the face or head, in order to determine the exact position of the head.

DR. J. SUYDAM KNOX.—In regard to making an exact diagnosis of vertex positions, I must often confess failure, if I rely only on digital touch.

I have no doubt, if the practitioner is called early to a case of labor before the uterus has become contracted and the bag of waters has been ruptured, that it is possible by abdominal palpation to make out the position of the fetus. When, however, labor has gone on for several hours, and the uterus has become irritable, contraction and retraction taken place, and the liquor amnii to some extent discharged, I am satisfied that it is often impossible to make out a diagnosis of the position of the fetus by digital examination. Even if you can determine that the vertex is presenting, you cannot then make out the position exactly. I have no doubt that Dr. Jaggard is correct about those large obstetrical hospitals in Europe. The diagnosis is made because the patient is under observation from the time labor begins. But the busy practitioner is called after labor has progressed some hours, and the uterus is so irritable that as soon as he begins to make any abdominal examination, it contracts, and it is impossible easily to make a diagnosis. I do not introduce the hand into the vagina in many cases, but when the labor is protracted, and I think the use of forceps necessary, and I cannot make out the exact position of the head, I give the patient an anesthetic, and introduce the hand sufficiently to find out how the head lies. I cannot see how sepsis can occur by the introduction of that portion of the hand necessary to make a diagnosis, and I think the diagnosis should be made before instruments are applied. I have several times tried the oblique introduction of the long forceps, but doubt the wisdom of introducing them obliquely without reference to the shape of the mother's pelvis, and attempting traction. It is much better to apply the forceps to bring down the head, with reference only to the maternal passages, and when the head has been brought through the superior strait, to unlock the forceps and allow rotation before effecting delivery. At times it is better to remove the forceps entirely, and to re-apply them after rotation has occurred.

DR. DE LASKIE MILLER.—I was much interested in the very lucid paper that has been read. It is true that there were many statements that seemed strange to me. The paper was on the treatment of complications resulting from short cord, and the illustration was a case in which the cord was forty-seven inches long, with only four coils around the neck. This should not, it seems to me, be a cause of dystocia; but admitting that it was, we come to cases of actually short cord causing dystocia. Take a cord that measures only four inches in length, or a case of labor which has occurred in which there is no cord, of course, there must be a placenta, and the fetus is attached through this directly to the wall of the uterus. In such a case, how can delivery take place without applying traction force sufficient to sever the placenta? Physiologically, the contraction of the uterus, especially after dilatation is completed, is attended with a muscular retraction of the fibres of the body and fundus, which diminishes the cavity of the uterus and has the effect of severing its relation with the placenta. It is, therefore, possible for the placenta to be severed from its attachment to the uterus, by this retraction, and, moreover, there can be no injury to the uterus from the short cord, if the contractions are normal, for while the organ is contracted, the relation between the attachment of the cord and the uterus, or the placenta and its attachment to the fetus, is not extended.

rather shortened, so that the advance of the child can take place, and delivery result.

A case is brought to my mind which occurred in my own practice, of a primipara who was perfectly healthy, with nothing abnormal until about the time labor commenced. When I saw the patient in the first stage of labor, she remarked to me that she had felt no movement of the child for a considerable time, but this produced no impression on my mind, for it is a common thing for patients to say, and I paid no attention to it. The labor proceeded, and as the head was expelled from the vulva, I did as I always do, pass the finger instantly to the neck with the view of searching for the cord, and if it is found there, liberate it. I found two or three coils of the cord around the neck, and they were so tightly drawn that it was impossible to disengage them. In order to deliver the child readily, I severed the cord. I noticed there was no circulation, and the child was stillborn, past all possibility of resuscitation, and it had been dead a long time, for I found a knot in the cord drawn so tightly that the circulation was entirely cut off. In addition to the coils around the neck, the cord passed over the shoulder, under the opposite arm, around the body and under the knee, and possibly there were other coils. It appeared very much like the statue we see of Laokoön. I infer that the movements of the fetus at the time labor commenced, or shortly before, had tightened the cord, causing its death. This is the only case I have met in my practice in which I could satisfactorily trace the death to the closing of the knot. In regard to diagnosis of position, I was not aware that it is so difficult to make the diagnosis of position. I believe the practitioner should make out a diagnosis by abdominal palpation, which can be done with great facility if he is accustomed to the practice; but I also believe that the diagnosis can be made with one fontanelle and the sutures. We can certainly discriminate between the anterior and posterior fontanelles.

THE PRESIDENT.—Before Dr. Bartlett closes the discussion, I want to say that my observation in regard to accuracy in determining the position of the presenting part agrees exactly with his, and for all practical purposes I cannot see any reason why we should be so particular about finding out the exact position. With the light we have received during the past few years in regard to the possibility of causing sepsis by repeated examination, it seems to me that the introduction of the finger or hand into the vagina or uterus in ordinary cases is hardly good practice. If soon after we reach the patient, we satisfy ourselves by *one examination* that the os is dilating, and that the presentation is normal, why is it necessary to repeat them if the case is terminated in a reasonable length of time?

In regard to diagnosing the position absolutely, I am reminded of a case which happened to me early in my practice, a year or two after I graduated. A case of labor was progressing slowly and I called to my assistance one of the most eminent men in the city. He made the diagnosis without a particle of difficulty, applied the forceps, delivered the head, and when it made its appearance it was exactly in the opposite position to that which he diagnosed. The longer I practise, the less certain I am about the position of the head in a large number of cases.

DR. JOHN BARTLETT.—A fellow has expressed surprise that as a

means of diagnosis I have not made reference to abdominal palpation. I purposely limited my remarks to the ordinary methods of vaginal examination. I may, however, give it as my opinion that the method of determining the position of the head by abdominal palpation will probably prove available to those only who are capable of diagnosing head positions by the ordinary examinations per vaginam.

Doctors Jaggard and Miller have called in question the assigned cause of dystocia. To them it does not seem probable that the shortened cord was the cause of delay. Their objections are well taken. In this case there are two facts which give rise to the question whether the cause of the dystocia was really the shortening of the cord, the one in itself offering at first glance a sufficient cause for delayed labor, viz., that the head was projecting decidedly forward over the pubic bones; the other seeming to guarantee freedom from restraining tension on the part of the cord, namely, its unusual length; so that after the delivery of the head the funis, though shortened, was not too tense to admit of its coils being released in the usual way. It must be considered, however, in reference to the abnormal position of the head at the superior strait, that while its attitude presented an impediment to the descent of the occiput, it invited a facile descent of the forehead; and yet this descent did not occur. Besides, the head could be swayed to and fro in the median plane of the occipito-frontal diameter so easily and freely as to give the impression that it swung on a pivot at the neck. In fact, it was this sensation imparted to the hand that suggested the probable suspension of the child by the cord; and this suggestion was strengthened by the apparent absence of any natural tendency of the head to settle into the excavation, either in the first instance as a brow and face presentation, or subsequently, as a right occipito-anterior position.

In regard to absence of great tension of the cord after the birth of the head, it is to be considered that, without calling in question the possible detachment of the after-birth, surging of the coils about the neck, etc., the well-known mechanical principles by which the attached placenta in such cases in some measure keeps pace, so to speak, with the descending head, so clearly described by Dr. Miller just now, may themselves offer an answer to the objection that the cord was not found more tense after the head was delivered. No argument, however, can place the case certainly within the category of those in which dystocia is due to shortening of the cord. It will be perceived that I have regarded the case as interesting rather because of the unusual diagnosis of the malposition of the funis than as one in which this abnormality produced dystocia; and that I have availed myself of the free exploration of the presenting part by which the diagnosis was made as an opportunity to present what I regard as the more important part of this paper. I refer to my views as to the insufficiency of ordinary vaginal examinations as means of determining presentations and positions in labor. Upon the discovery of the four coils of cord about the neck, in association with other circumstances and conditions mentioned, I conceived the circling of the funis to be the cause of the dystocia, and conducted the delivery in accordance with that idea.

Criticisms upon the plan adopted should be made in this case,

as in others, from the ante-partum standpoint of information. They should not be based, for instance, upon the knowledge that the cord was of very unusual length. This surplus in the cord's length threw a new and unexpected light upon the case, casting difficulties, before prominent in the foreground, into shade, and causing possibilities not before visible distinctly to appear. In this new light an opinion might be formed that the case left to nature would have terminated well, and that all interference was unnecessary. And yet I incline to the opinion that the ante-partum view of the case through the dark glass of the clinical obstetrician was the correct one.

DR. JAMES H. ETHERIDGE made the following remarks upon

ANTISEPTIC TAMPONNEMENT OF THE VAGINA IN THE TREATMENT OF
PELVIC INFLAMMATIONS.

What I have to present refers to tamponnement of the vagina and supporting the uterus in cases of pelvic trouble, notably of inflammation and enlargement of the uterus, and as the work has grown upon me, other complications in the way of pelvic trouble have also been treated with a result that has rather surprised me. For it I claim nothing original.¹ . . . The material that I use is a preparation of wool that is called "antiseptic wool." This wool is finely carded, free from all oil and foreign substances. A piece is cut off, of such a length as will fit nicely into the vagina, and then with the patient in the genu-pectoral position, with the perineum retracted, this is stuffed into the vagina and left there. The upper end of this tampon can be soaked in any antiseptic solution, as boro-glyceride or listerine, and with a piece of string attached to the lower end of it, the patient can remove it and douche the vagina, in readiness for the next tampon, and in this way tampon after tampon can be introduced and the uterus held up to the highest possible level, and advantage taken of the natural drainage from the uterus of the superabundant amount of blood. The inflammations of the uterus we are usually called upon to treat are not active, but chronic, and if we hold the uterus up so that it can drain itself properly through the veins, the nutritive changes which take place will be facilitated to the greatest extent. A small Sims' speculum can easily be applied without trouble to the patient, and this wool can be pushed into the vagina so that when the patient gets up she has a soft elastic cushion for the uterus to rest upon. In this way the greatest comfort is at once experienced. . . . These tampons are removed after four or five days without the slightest odor upon them.

When the uterus is enlarged it becomes heavy, sinks, and presses the veins which carry the blood out of the uterus, and we have strangulation. By raising the uterus up, the blood flows freely and the nutritive changes tend always to health. One outgrowth

¹ For a full account of the use of the vaginal tampon see Mundé's "Minor Surgical Gynecology." 2d Ed., pp. 194 to 218.

of the use of this tampon may be that many cases of laceration of the cervix, now operated upon, may escape operation. I have been surprised to see how very nicely patients get along, even though they have extensive lacerations, under this treatment.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of January 13th, 1887.

The Vice-President, DR. GILES S. MITCHELL, in the Chair.

A NEW ADJUSTABLE SPECULUM AND RETRACTOR.

DR. GEO. E. JONES exhibited and described a new speculum and retractor, lately devised, to take the place of an assistant.

"It is a well-known fact that the assistant's arm and back become greatly fatigued and cramped, especially in operations which require long time. Moreover, an assistant cannot always be had. To obviate these conditions, I constructed a self-retaining speculum and retractor combined that can be placed at any angle and remain so until it is deemed necessary to change it.



The variety of blades is a combination of the various patterns, except that I have made the heel of the blade considerably deeper and of a curve adapted to the parts it is intended to rest upon or retract.

When the blade is placed in the vagina (the patient being in the dorsal position and the buttocks brought down to the edge of the table) it can be changed to any angle by releasing the binding screw at the joint and moving the handle forward or backward, as the nature of the case may require. Then the joint is tightened while the handle is held in a fixed position. More or less retraction being now necessary, a weight ranging from one to five pounds is suspended from the hook at the end of the handle, or, if it should be thought best to omit the handle, the latter

may be removed and a small thimble provided with a hook may be screwed on in its place, whereby less room is taken up than with the handle. For convenience in operating, a notch is made on the edge of either flange to hold the ligatures or wires, by which they are kept in order and out of the way. The blades can also be attached to Emmet, Thomas, or Eric instruments with very little trouble, which would enhance the value of their use in the Sims' or knee-elbow position.

This instrument has been used at St. Mary's Hospital in this city by Dr. Wenning and myself in the presence of Dr. Giles S. Mitchell, J. L. Cleveland, Theo. Sittel, and others, who gave it their hearty approval.

The speculum and retractor with blade or blades can be had of the surgical instrument-maker, Wm. Autenrieth, of this city."

DR. WENNING remarked that he was the first to use the new instrument during an operation and could, therefore, from personal experience, speak of its merits. As said by the inventor, it relieves an assistant from the necessity of making continued downward pressure, which will soon tire the hand, and will also prevent the latter from being in the way of the operator. The idea of this instrument was suggested by observing that a Simon's retractor with a rather large handle, used at St. Mary's Hospital, generally remained in situ without the aid of the hand; sometimes, however, owing either to the restlessness of the patient or a peculiar form of the posterior wall of the vagina, the instrument would slip out. His confrère, Dr. Jones, therefore conceived the idea of constructing a retractor which could not be displaced. At first he thought of fixing it to the table in use at the hospital (also designed by the same gentleman), but this idea was rejected because it was thought that such an arrangement might injure the patient should she make an unexpected move during the operation. After considering and rejecting several other plans, the inventor finally evolved this instrument which for simplicity and general adaptability leaves nothing more to be desired. The principle upon which it acts is the law of gravity, namely, the weight always acts in a straight, vertical line; hence pressure can be made upon any part of the blade, from the heel to the point, by simply moving the handle forward or backward and fixing it in this position by means of the binding screw. If the greatest traction be desired at the vulvar orifice, the handle is placed in a vertical line and the weight suspended from its end; if, however, the fornix of the vagina is to be opened up, the handle is swung forward and the weight attached so that the tip of the blade and the weight will be in the same vertical line. (The speaker here illustrated the exact balance of the instrument by resting the tip of the blade on the end of his thumb, the weight below holding it perfectly poised in this position.) To still further prevent the liability of slipping out, the inventor gave a rather sudden dip to the blade just in front of the heel. To a question, whether an unruly patient might not, nevertheless, displace the instrument, the speaker replied that it was put to a severe test at the hospital upon one of his patients who struggled violently whilst under the influence of ether, so that she was with the

utmost difficulty kept upon the table, and yet the retractor was not displaced in the least. An interesting point is the fact that the downward pressure required can be measured exactly in pounds, and it was surprising what a weight some patients will bear. An experiment was made upon several patients without being anesthetized, and although the gradually increased weight would finally be enormous, they did not complain of any great discomfort. This illustrates the force often necessary in overcoming the natural resistance of the perineum.

Although this instrument was intended only for the dorsal position, the speaker thought it could also be used to great advantage in the Sims' position by simply omitting the weight. Every one knows that it requires a skilled and trained assistant to hold Sims' speculum satisfactorily to an operator, not alone backward traction being required, but also inclination of the blade upward or downward, according to the nature of the case. With this instrument, however, the blade could be first put in the proper angle with the handle, and simple backward traction would then suffice in bringing the parts to view. Hence an assistant not so well trained could render efficient service during an operation.

DR. GILES S. MITCHELL said it afforded him great pleasure to lend his testimony in support of the instrument just exhibited. Some weeks since, through the courtesy of the inventor, Dr. Geo. E. Jones, the speaker had an opportunity of seeing it thoroughly tested. The speculum is easy of introduction, remains in situ and renders unnecessary the assistant whose duty it is to hold the speculum. The most violent vomiting on the part of the patient does not influence in the slightest the axis of the instrument. The multiplicity of blades of different shapes and sizes so broadens the field of usefulness of the instrument that it may be successfully employed in any case where the use of a speculum is indicated.

DR. THAD. A. REAMY thought the invention very clever. He supposed the instrument would act well in cases where the vagina and perineum are flabby and relaxed. In other conditions, he did not think the weight would be sufficient to hold the vagina open sufficiently for operations. In suitable cases, with those who make local applications to the os and cervix with the patient in the dorsal position, it would be very convenient.

As to the shape of the heel of the speculum, he thought it similar to that of Prof. Tallifaro, of Atlanta, Ga. The broad point was similar to his own modification of Cusco's pessary. It is a mistake, either with a Simon or any form of the bivalve speculum, to have the blades too wide. When the shape of the vagina is considered, it is plain that a blade much wider than Sims' original pattern lessens the view rather than increases it. If the canal is widened transversely, it must thereby be narrowed antero-posteriorly.

DR. JONES said, in answer to Dr. Reamy, that he did not confine himself to any particular blade—long or short, broad or narrow—but he made the heel of the blade deeper than any other speculum, and the curve is of a different form from that of Dr. Tallifaro. Nor is the vagina distorted in its use; at the same time it gives all the room needed for the different operations, as for laceration of the cervix, cystocele, vesico-vaginal fistula, etc. For general work, a weight of one to five pounds will be sufficient; if necessary, more can, however, be added.

The Society then went into executive session, during which the following officers were elected for 1887:

President, Dr. Gustav Zinke.

Vice-President, Dr. E. W. Mitchell.

Recording Secretary, Dr. Wm. H. Wenning.

Corresponding Secretary, Dr. W. Henry Illoway.

Treasurer and Librarian, Dr. Geo. E. Jones.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, March 2d, 1887.

JOHN WILLIAMS, M.D., *President, in the Chair.*

DR. GALABIN showed a uterus removed November last by Porro's operation. The patient made a good recovery.

DR. HORROCKS exhibited a fibro-myoma from a case of Cesarean section. The patient in this case died.

The President, DR. JOHN WILLIAMS, delivered the

INAUGURAL ADDRESS.

At the conclusion, a warm vote of thanks was proposed by Dr. Grailey Hewitt, and seconded by Dr. Braxton Hicks, which was carried by acclamation.

The discussion of the paper on

GALACTORRHEA.

which was read at the previous meeting by DR. GIBBONS, was opened by DR. MATTHEWS DUNCAN, who noticed the neglect of the science of lactation and deficiency of literature connected with this important and interesting department of practice. He believed Dr. Gibbons' paper to be the fullest account of the subject. Galactorrhea required definition, for there were many kinds.

That prolonged and exhausting suckling which led to depression and melancholia might be, but was not classed as galactorrhea. In Dr. Gibbons' case, there was no excessive flow, for thirty ounces a day could only be regarded as a case of long continuance of the flow, in quantity nearly what was secreted by an actively nursing woman. Dr. Matthews Duncan had seen in a healthy young woman a constant flow, so excessive as to run through the bed and over it, to the extent of many pints a day, but not for many weeks.

Another kind of excessive flow was not very rare in rich-blooded young women—milk running from the idle breast while the other was being sucked. He had watched such a case when the wasted milk was apparently more than the child could be swallowing, the

flow going on only while the opposite breast was stimulated by the sucking infant. The unilaterality of Dr. Gibbons' case was interesting, but it was not rare in ordinary healthy nursing. In Dr. Gibbons' case, cure came at once on the appearance of delayed menses, and it was most natural to ascribe the arrest of lacteal secretion to the appearance of menses, the one function alternating with the other as the growth of stags' horns with the rutting.

DR. CLEVELAND drew attention to what he preferred to call "incontinence of milk." In this condition the infant at the breast would cry more than usual, not being satisfied, it would not sleep as long as it should, and not present the appearance of thriving. On inquiry as to the sucking, the frequent reply is that "there is plenty of milk and that it runs away." Dr. Cleveland was satisfied that where a primipara suffered from this form of galactorrhea, she would prove an inefficient nurse. It seemed that there must be a disproportion between the glandular activity of the breast and the storage capacity of the milk tubes or reservoirs, and when the "draught" comes, the milk runs out so fast that much is lost, and the child is consequently imperfectly nourished.

DR. JOHN PHILLIPS mentioned a case, as did DR. HORROCKS, and the latter compared the physiology of secretion of saliva with that of milk, and suggested that galactorrhea might be due to vaso-motor or pure nerve influence. The secretion of milk was intimately associated with ovaries, but the nervous pathology had not yet been fully ascertained.

DR. C. H. ROUTH wished to speak more especially regarding the treatment of these cases. First as to the breast itself—amid the many remedies adopted, why was not local pressure of the breast carried out? It was a well-known method of treatment in cases of orchitis or swelled limbs. Dr. Routh remembered a case where a lady continued to secrete milk long after the weaning of her child, and which persisted some three years, and then became restricted to one breast. It yielded partially to treatment by pressure, but completely stopped when treatment was directed to the womb. There was remarkable sympathy between the womb and breasts. Mammodynia induced by uterine or ovarian disease will remain till the womb or ovaries are treated. In Dr. Gibbons' case, as soon as menstruation was established, the galactorrhea ceased.

Dr. Routh thought that by the introduction of a piece of caustic within the uterus, as suggested by Sir James Simpson, the flow of blood or menses might have been determined, and the cure of nature anticipated. Dr. Routh had often induced a bloody discharge from the uterus by this method, and very speedily too.

DR. PLAYFAIR knew a good deal of the practice of the late Sir James Simpson, but was not aware that he ever adopted or recommended the treatment named by Dr. Routh.

DR. J. BLAND SUTTON said he had found galactorrhea in the cow due to tubercular disease of the ovaries, and in a case of unilateral galactorrhea in a kid, there was a cystic ovary on that side.

DR. HERMAN asked if the mammary abscess from which Dr. Gibbons' patient had suffered might not be the explanation of the unilateral character of the galactorrhea, one breast not secreting because of destruction of gland tissue by the abscess?

DR. CHAMPNEYS said that Dr. Gibbons' case exemplifies the an-

tagonism or alternation between lactation and menstruation. There are cases in which secretion of milk co-exists with uterine hemorrhage.

He had seen a case in which the more the breasts swelled the greater was the uterine loss. Nursing was stopped, ergot given, and the breasts soon subsided. With regard to treatment, Dr. Champneys could not see why eczema need have prevented the application of pressure. A drying powder on lint or cotton-wool could have been used with strapping over, the straps reaching more than half round the body. He thought there was evidence in favor of the use of ergot in these cases. Derivation to the uterus by hot foot-baths was also not mentioned. Dr. Champneys could imagine that uterine hemorrhage might be caused by the introduction of caustic within the womb as named by Dr. Routh, but such hemorrhage could not be considered menstruation. Dr. Champneys had heard of wholesale spaying of milking cows in Texas with the result that the milk had gone on to the owner's satisfaction for a long time, in one case for eleven years.

DR. HEYWOOD SMITH thought the discussion would lead us to give more attention in such cases to the condition of the uterus and ovaries.

DR. W. HOLLINS had seen lacteal secretion in infants, male and female. He would like to hear what the condition of the breast was in Dr. Gibbons' case after the arrest of secretion. Was it atrophic? From analogy with the salivary glands, the galactorrhea might be of the nature of a paralytic secretion.

In reply, Dr. Gibbons said that the eczema was due to constant saturation of the skin with the milk that flowed away, and that his case was so entirely unilateral that not a drop of milk could be squeezed from the right breast. When the patient was well, the left breast assumed a normal appearance.

"THE MECHANISM OF THE THIRD STAGE OF LABOR."

1. *The Separation of the Placenta.*—DR. CHAMPNEYS read the first of a series of papers on the above subject, reviewing the facts furnished by our knowledge of the clinical course of natural labor and by that derived from Porro's operation.

From the former it is known that until the birth of the head the placenta is not detached, and that after the birth of the head it is not at once detached. Lenser found by examination of 168 women that the placenta is completely detached as soon as the child is born. As regards Porro's operation, the inferences drawn from it must be regarded with suspicion on account of the great interference which has taken place with the uterus.

The facts derived from these two sources do not tally.

He next discusses the theories of the cause of placental detachment.

A.—By contraction and retraction alone, through reduction of the placental site.

B.—By contraction and retraction indirectly. (a) By separation of the centre which is less firmly attached than the edge, leading to aspiration of blood. • (b) By squeezing blood towards

the surface during contraction. (c) By rapid diminution of intra-uterine pressure consequent on the birth of the child.

C.—By detrusion (Lenser), the placenta being forced in the direction of least resistance, *i. e.*, the axis of the parturient canal. He then discusses the theories of the modes of placental detachment.

A.—According to the situation of the placenta.

B.—From edge.

C.—From centre.

D.—According to firmness of attachment of its parts.

He then considers the evidence furnished by the various facts, and shows that the question is, whether the separation of the placenta is independent of rupture of utero-placental vessels *as a cause*. The decision depends on

(a) Proved hemorrhage behind the placenta in normal labor.

(b) On the mode of expulsion of the placenta. He concludes (pending the decision of the two above questions to be dealt with in a subsequent paper) that hemorrhage to a moderate amount plays a certain though subsidiary part in the mechanism of the detachment of the placenta.

REVIEW.

THE SCIENCE AND ART OF OBSTETRICS. BY THEOPHILUS PARVIN, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia, etc. Philadelphia: Lea Brothers & Co., 1886, pp. 701.

The distinguished Professor of Obstetrics at the Jefferson Medical College gives us herein the best fruits of his researches and of his practical experience. For five years, he tells us, he has labored to prepare a clear and a complete exposition of the science and art of obstetrics. "He has endeavored to present the most recent information relating to obstetrics, at the same time not overlooking important truths established by past experience. Having been actively engaged in practice for upwards of thirty-four years, and nearly two-thirds of that time a medical teacher, he has endeavored to write a book which will be useful alike to students and to practitioners." Such having been our author's opportunities and such his aim, there is ample reason for the publication of his work even in the face of the many excellent and complete expositions of the art which are already in the hands or at the disposal of both the student and the practitioner. In general, this treatise may be defined as exact, concise, scholarly. It bears evidence of deep research into what may be termed the history of the art, and it stamps the author as a man thoroughly versed in classical lore, and one who has often turned aside from the dry routine of his life-pursuit and sought refreshment from

the myths and legends of the dim past. Parvin, in fact, has set an example which some might call pedantic, but which might to advantage be more generally followed, and this is the insertion in his writings of references to the beliefs and customs of the ancients in regard to obstetrics, references which constitute as it were oases where the student and the practitioner may rest awhile and gain strength for further research and study. One thing, however, we miss in this treatise, and this is more individuality. The art of obstetrics is to-day in many respects fully formed and established on a sound basis, but there are still numerous topics on which a practitioner and a teacher of many years' experience should have very decided views, and these, we think, he is called upon to emphasize more forcibly than is frequently our author's custom. No writer of to-day can afford, certainly in obstetrics, to appear in any other light than that of a teacher, and whilst we deprecate egotism or dogmatism, we certainly seek for and expect to find more originality than, we are compelled to state, Professor Parvin has allowed himself to show. Further still, although there are many who will undoubtedly hail with delight the appearance of a work which is not overburdened with reference to the labors of our German co-workers, we believe that Parvin, in so closely quoting from the French, in particular from Charpentier's master-work, must fail in places to keep abreast of the times in regard to the theory of the art in particular, for it is to this side that the Germans lean, and in this they unquestionably excel, with the result of indirectly contributing much of value to the practical side of the science. We would not be understood as implying that Parvin has neglected contemporaneous German work; on the contrary, he has neglected little, either ancient or modern; we mean purely that the French do not lead the Germans in either the theory or practice of obstetrics, and therefore the student will profit more from an elaboration of German views than of French.

The above generalizations in regard to this work have seemed necessary in order to clearly state the distinctive light in which this most recent writer on obstetrics appears to us. He has given us a most learned treatise, and he has left us but little scope for specific criticism. What he says is well said; if we take exception to anything in particular, it is on the score that often he has not said enough as a teacher to the student, and as a guide to the practitioner.

In the elaboration of his work, Parvin has followed a good and a natural scheme. He divides his subject into five parts, the one leading to the other, and these divisions, in sequence, are: The Anatomy and Physiology of the Female Sexual Organs, Pregnancy and its Pathology, Labor and its Pathology, The Puerperal State, Obstetric Operations.

A careful analysis of this work is not called for, since, as we have implied, its exactness in and fidelity to the modern exposition of the art is all that could be expected. Errors in statement we do not detect, and the teaching in general will prove sound in its practical application. In connection with certain matters of practice which may be called still undecided, we find the author on the side which we believe to be correct. We might object to his advocacy of the term "support" of the perineum, which we think should be banished from obstetrical treatises, for the reason

that it is not descriptive of what we aim at doing and what we find the author does, but since he really supports the head, and thereby retards its progress till the perineum has had time to relax, his teaching, if not his term, is above criticism. The management of incomplete miscarriage, the method of conducting the third state of labor, points still in dispute, are advocated by Parvin in the direction towards which the vast majority of obstetricians are tending. In neither instance is the ultra-expectant method favored, but both the placental shreds after miscarriage, and the placenta itself at term, are to be in the one case removed, and in the other expressed, after nature has been given a reasonable time in which to show her ability. In regard to Credé's method of placental expression, we could have wished simply that the author had been a trifle more explicit in regard to the interval which should elapse after the completion of the second stage of labor before resorting to it. Credé's method fails in the hands of many for the reason that they resort to it prematurely. It would have been well to state, what has doubtless been the author's experience, that ordinarily from ten to twenty minutes will elapse before the uterus has recuperated sufficiently for expression to be of value. As regards puerperal fever, Parvin is a pronounced advocate of its being septicemic in nature. To quote his words: "From what is known of so-called puerperal fever, it should not be regarded as a specific disease, and strictly speaking, there is no puerperal fever, that which is so denominated being a febrile affection caused by the entrance into the system of a poison from without, the nature of which we do not know, the entrance taking place through a wound of the uterus, or of some part of the vulvo-vaginal canal." We believe the author wise in not so distinctively committing himself to the germ theory as is the custom of many gentlemen nowadays the world over. To judge the question from Karl Braun's standpoint, and this is what we gather Parvin does, seems to us a far wiser course, than to be carried headlong in the current which is filled with germs, and the course of which is towards new germs, each one of which, or all of which, may or may not be the essence of the poison. As Braun says: "The significance of bacteria in the etiology of surgical and puerperal fever seems to be a subordinate one; they seem to have no influence upon the origin, and perhaps no important influence upon the course of surgical fever. The putrid poison kills and produces fever with or without bacteria."

The clinical varieties of puerperal fever given by the author are not needlessly complicated, as is so often the case with other writers, and his description of the symptomatology is succinct and to the point. When we come to the question of treatment we miss what we would claim is essential detail. The average practitioner has, we fear, rather cloudy notions in regard to the proper treatment of the puerperal diseases. He is too apt to use the douche, for instance, or else too slow if he uses it at all. On no subject nowadays is it more important to give distinct rules, for whilst the intrauterine douche, when indicated and properly used, is an agent of the greatest good, the natural question of the inexpert is, when shall I use this douche and when not; and again, if using it, when shall I stop? Such, and the like, are points on which both student and practitioner need judicious caution and explicit direction, and it behooves the teacher and the writer to descend

here, if anywhere, into the very minutiae. Again, it is not sufficient to tell the student and practitioner to use solutions of corrosive sublimate for purposes of injection. He needs further to be told to be circumspect in their use, since there is so much liability to poisoning from solutions of the strength which Parvin recommends, 1 to 2,000 or to 3,000, that many obstetricians refuse to employ the agent at all for purposes of irrigation. Further still, to note another point, the valuable drug antipyrine is sometimes followed by marked prostration, sub-normal temperature, even transient collapse, and our author, we think, should have laid more stress on these points, and advised its administration well protected by stimulants. These points which we note seem small to the skilled obstetrician and teacher, but the student must learn them from the books expressly written for him, or else from experience, which may be bitter. It is for the welfare of the student's patient that minutiae should be emphasized in his text-books.

The part devoted to obstetric operations is complete and condensed, although we could wish it had been more amplified by the expression of the author's personal views. In speaking of the modified Cesarean section, he states that the name usually assigned to it is that of Säxinger. This is, of course, a typographical error for Sängner, but we believe, from recent personal investigation of the literature, that he might well have added that it is questionable if Sängner's name should be applied to the operation at all. The essential part of the method consists in the turning in of the edges of the peritoneum and the multiple suturing of the opposed serous surfaces, steps which Sängner did not emphasize at all in his earlier publications and which were performed by others long before him. In his description of the operation, further, Parvin omits to lay stress on this very step of turning in the serous surfaces to bring them in contact, important because this step leads to early agglutination of the wound surfaces, and therefore to the thorough protection of the peritoneal cavity from the access of fluid or of shreds from that of the uterus.

Such are the few points which we deem it essential to lay stress upon in this notice. They are blemishes in an otherwise sound treatise. Parvin's distinguished position as a teacher, his scholarly attainments, and his honest endeavor to do his best by both the student and the physician, will doubtless secure for his treatise favorable recognition, although we do not find it close enough in essential detail to be able to displace a few of the deservedly favorite text-books already before the profession.

EGBERT H. GRANDIN.

ABSTRACTS.

1. **Furst: On the Excess of Male Children when Conception Occurs at the time of the Post-Menstrual Anemia** (*Arch. f. Gyn.*, XXVII., 1).—The first question F. endeavors to answer is as to the time and the cause of differentiation of sex in general. The conclusion reached is that it is highly probable that the differentiation may occur before, during, and a little while after impregnation: that the chances of the development of one or another sex in one and the same woman may vary before final differentiation occurs; and that the ultimate cause will be all the more powerful the less the previous ones have had a marked leaning in one or another direction. The cause of differentiation he believes resides largely in the good or bad state of health of the parents, in the first instance there being an excess of females and in the latter of males, relatively speaking.

The second question which he considers is excess of male births in cases of conception during the post-menstrual anemic state. He has investigated 193 cases carefully in regard to the probable date of conception after menstruation, and there is a notable increase of male births over female in the cases where conception probably occurred within the first five days after menstruation; that is to say, when the woman is not so well nourished as later, when the uterus is more congested. E. H. G.

2. **Heinricius: On Chronic Hyperplastic Endometritis** (*Arch. f. Gyn.*, XXVIII., 2).—Toward the study of this affection H. contributes the history of 63 cases, treated in the clinic at Helsingfors, in part by Professor Pippingsköld, in part by himself. He advocates the use of the curette, followed by injections of iron, iodine, gallic acid, or cauterization with nitrate of silver, or the stick of zinc-alum. The rules he lays down in regard to the precautionary measures which should be taken in case of curetting for the purpose of cure are similar to those which it is customary to follow here. In the reported cases, there was in not a single one any special unfavorable reaction, and in all the cases, except seven, statement is made in regard to the ultimate result: in thirty, cure as regards the menorrhagia; in four, absolutely no hemorrhage of any sort after the treatment—these patients, however, had already reached the change of life; in eighteen, improvement in so far as amount of blood lost at the periods was decreased. In other words, nearly sixty-five per cent were entirely cured. From these cases it is further apparent how untenable the statement is that thorough curetting, whilst it cures hyperplasia, at the same time induces sterility. Of the sixty-three reported cases, H. is able to state that in sixteen either labor at term or miscarriage has since occurred, and in three of the cases conception ensued in from four to eight weeks after the curetting. E. H. G.

EDITORIAL.

THE following notice has been sent to this JOURNAL, with the request that it be inserted where it will meet the eyes of the profession in this country. It gives me pleasure to comply with the request, and to open the subscription. *Contributions may be sent to me*, and will be forwarded to Berlin on July 1st; they will be acknowledged by letter and duly reported in this JOURNAL.

PAUL F. MUNDÉ.

20 WEST 45TH STREET.

AN APPEAL FOR A MEMORIAL TO PROFESSOR CARL SCHROEDER.

The undersigned have combined for the purpose of erecting to the memory of their friend and teacher,

PROFESSOR CARL SCHROEDER,

who died on Feb. 7th, 1887, a suitable testimonial. Our idea at present is to place a marble bust of the deceased in the Gynecological Clinic at Berlin; but this project is subject to future modification. We request those members of the profession, and others who have benefitted by Prof. Schroeder's advice and treatment, and who desire to assist us in our enterprise, to send their contributions to Dr. J. Veit, Berlin, W. Matthäi-Kirchstrasse 12.

Frommel (Munich), Gusserow (Berlin), M. Hofmeier (Berlin), Leube (Würzburg), Olshausen (Halle), Rosenthal (Erlangen), C. Ruge (Berlin), G. Veit (Bonn), J. Veit (Berlin), R. Virchow (Berlin), Waldeyer (Berlin), Winter (Berlin); the Obstetrical and Gynecological Society of Berlin through J. A. Kaufmann, Löhlein, A. Martin.

Subscriptions from America:

Paul F. Mundé.....\$25 00

THE AMERICAN JOURNAL OF OBSTETRICS

AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.]

JUNE, 1887.

[No. 6.

ORIGINAL COMMUNICATIONS.

THE DRY TREATMENT IN GYNECOLOGY. PRACTICAL DETAILS: THE REMEDIES, THEIR USE AND APPLICATION.

BY

GEORGE J. ENGELMANN, M.D.,

St. Louis.

I FEEL called upon to supplement the brief paper recently read before the St. Louis Gynecological Society, in which I first expressed my views upon the importance of the dry treatment in gynecological practice; and since it is impossible for me to answer individually the numerous inquiries from practitioners favorably impressed with the dry treatment and anxious to test its merits, who ask for information as to the various preparations of cotton, wool, or jute, where they can be obtained, how they are to be applied, I will now give the details of the new method as gradually evolved and now adopted in my practice.

By the dry treatment in gynecological practice I mean the treatment of female pelvic disorders, uterine, circum-uterine, and vaginal, by the use of powders and cotton, wool, or jute in the dry state, impregnated with the medicinal agent, or serving as a carrier for powders. I have used the term because it corresponds in gynecological practice to the treatment which has of late years proven so effective in surgery and in the management of disorders of other organs. Most of the applications

are old; these I have systematized and utilized as "The Dry Treatment" in the management of uterine disorders, for which gynecologists now and then have used some one of these numerous applications. The range of practice to which I have adapted it gives it the dignity of a method, in which are united and culminate the isolated efforts of many of our most progressive workers, who for years have employed some detail or other of the method: thus Taliaferro advocated the mechanical qualities of the cotton tampon as a compressor and a support: antiseptic gauze and cotton is used much, of late, as a vaginal dressing in surgical cases by German operators: clay has been used as a vaginal packing to give rest to the pelvic viscera: so other individual features have been utilized, but have never found general favor: Kugelmann, of Hanover, made the beginning in the use of dry powder as an intrauterine application: Eduard Martin, of Berlin, my first instructor, used lacilla of tannin and of iron over twenty years ago; and, in a loose way, the tampon has been used by many.

ADVANTAGES OF THE METHOD.—The advantages I claim for this method are in brief the following:

1. *It is safe.* No evil results are liable to follow from the nature of the remedy and the site of the treatment: serious results are out of the question, and even discomfort, which may be caused by excessive or injudicious applications, by a tampon too large or badly placed, is readily obviated, as the agent is thoroughly under the control of the patient, who can remove the tampon herself with ease, and relieve such pain as may be excited, even by the medicinal agent used, by washing away the remedy by means of the vaginal douche.

2. *Immediate comfort is afforded* by the treatment, which causes no pain upon application, but relieves the more annoying symptoms at once, contrary to the immediate effect of intrauterine medication, which is more or less painful, if not dangerous, however good the results which follow. The preparatory cleansing is always agreeable, the mechanical effect of many of the powders used is soothing, and the tampon eases the pain or nervous irritation, caused by pressure, friction, and displacement of parts, as soon as it is placed.

3. *The effect produced is mild and continuous.* More decided and permanent, less irritating and dangerous is the result brought about by gentle, well-distributed, and permanent pressure, and

by the continuous absorption of a remedy in a mild form, as is the case when the elastic tampon is used for support, and powders and cottons for medication, whilst by most methods heretofore in vogue the remedies applied were of necessity proportionately severe, as everything was accomplished by the application as made during the few moments of treatment.

4. *Rest is given the pelvic viscera:* the tampon is the uterine splint. Applications so made, whether for medication, compression, or support, rest and steady the parts, serving as a splint to the diseased tissues; fixing them, to a certain extent, even during motion of the body; preventing friction of the inflamed or abraded cervix and straining of the tissues, traction upon the ligaments, and serving to carry out that all-important but much neglected aid in gynecological treatment, the prevention of coition.

5. *The treatment is clean and antiseptic.* Secretions are absorbed, cleanliness and asepsis of the parts is assured by the very nature of the treatment; the patient does not soil herself or her clothing; the physician does not stain his hands and instruments or the linen and carpets of his client. It is only in case of a superabundance of uterine or vaginal discharge, which is not absorbed by the tampon, that part of the medicinal agent may be carried away with the escaping fluid, which may, when perchloride of iron or tannin is used, slightly stain the patient's clothing, and this must then be guarded by a cloth.

6. *All the pelvic viscera are influenced,* whether so intended by the physician or not, though certain parts only are reached directly; hence he must of necessity regard parts which generally escape attention. The treatment not only affects the organs mainly diseased and the object of attack, but all surrounding tissues which sympathize to a certain extent, so that the method of necessity leads to better and more general results. The endometrium cannot be reached directly, but must be acted upon through the tissues, which is by far more safe and rational than the treatment of the diseased uterus or pelvic tissues through the endometrium, as is often done under the despotic sway of the intrauterine swab. This precaution is of exceeding importance, on account of the very common yet often very obscure and comparatively slight affections of the peritoneal and subperitoneal tissues, the ovaries, ligaments, and tubes, which are disregarded by the routine gynecologist and greatly aggravated

by pessaries and intrauterine applications; whilst even without especial intent on the part of the practitioner they are by this method not endangered but directly benefitted. Most pelvic affections of necessity determine some more or less marked change in the uterine mucosa; no metritis, perimetritis, or salpingitis attains a chronic stage, without causing at least a congestion or hypersecretion of the endometrium, evident to the eye, and hence the centre of attack to the detriment of the patient. In direct contrast to this prevalent and dangerous method stands the Dry Treatment, which overcomes these secondary derangements of that small and delicate membrane by removing such obstructions to the circulation as may exist by reposition of the parts, by preventing renewed irritation by reason of the rest and fixation afforded, and by medication of all the diseased tissues.

7. *A variety of purposes can be accomplished by one and the same application.* Several medicinal agents may be used at one time, even directed to different parts, and the mechanical properties of the agent which carries them can also be utilized in a number of ways. The tampon which is used to replace and support the uterus may at the same time serve to prevent friction of the eroded cervix against the vaginal wall, it fixes and rests the part and protects it, whilst it medicates by the drug it carries. This may be iodine, to further absorption in the hyperplastic uterus; this iodized tampon may be covered by a layer of ferrated cotton, which acts as an astringent to the vaginal walls; iodoform may have been applied to the eroded cervix, yet bismuth and alum can be dusted over the vaginal walls to cleanse, protect, and contract. By judicious management, many indications can be fulfilled by the one application.

8. *This method neither excludes nor does it interfere with other methods of treatment,* such as mechanical manipulations, reposition, intrauterine applications, or the use of electricity.

Such are the advantages of this method of treatment, and I have been so well satisfied with the results that I feel justified in saying that the practice of gynecology is thereby rendered more satisfactory, more safe, and more agreeable. This has been my experience in private practice amongst my clientele, and it has been equally satisfactory in my clinic at the Post-graduate School. It is in the clinic, among the working poor,

that the advantages of this treatment are most strikingly evident, they come from their work, in the cars or on foot, they return to their work when they have been treated, and they go back relieved of their pains, strengthened, and better able to resume their task. If I make an intrauterine application, it is with a mild remedy and gives no pain, unless the case be one of hemorrhage; the effect of the powder upon the irritated parts is soothing, the tampon rests and supports the displaced parts, prevents traction, pressure, or friction, and the application itself causes no pain. If the tampon is properly placed, the patient invariably experiences relief, unless during the very first disturbance of greatly displaced parts: if cellulitis, chronic periuterine inflammation, which is so very common, co-exists, this is benefitted, whilst this is the very condition which makes the pessary and the applicator so dangerous. Certainly all who have witnessed the method and the results achieved—truly surprising for an out-door clinic—will testify to this; patients are not made to suffer, and their labors are not interfered with, but the treatment is easy and they go away relieved, better able to resume their vocations, be it at the sewing machine, the counter, or the washtub, never in distress or cramped with pain.

WHY THE TREATMENT WAS RECEIVED WITH FAVOR.

I have been gratified at the reception accorded the paper in which I first announced my results, and at the expressions of commendation from all who have witnessed or tried the treatment, and I may say that it has found favor, not only by reason of its inherent merits, but also because the pessary and the intrauterine application have now been abundantly tried and have been found wanting. The practitioner has failed to derive the promised benefits from these greatly over-estimated methods, and he is no longer willing to subject his patient to the dangers which their universal use entails, with so little prospect of reward.

The new departure is in harmony with the feeling of the profession at large and the *reaction now taking place* against the routine practice, the *aggressive and dangerous practice of powerful intrauterine medication*, and the *indiscriminate use of pessaries*. The time has come for the introduction of a more mild, safe, and certain method of uterine therapeutics. Gynecological practice has extended beyond the reach of a few ex-

perts and is in the hands of the profession at large, who find not only that, by following text-books and journal articles in their practice, the expected results have not been attained, but, on the contrary, mischief is often done. Pessary and intrauterine application, each most excellent in its proper place, have become the routine treatment: to speak plainly, we can almost say that gynecological practice turns about the insertion of a pessary or the application of tincture of iodine, nitrate of silver, or Battey's fluid to the uterine cavity. If we listen to the experience of thinking practitioners, much suffering is caused, and often more damage than good is done, by this indiscriminate routine gynecology. The ill results which follow the use of pessary and applicator are due to the prevalence of low and often occult forms of inflammation of ovaries, tubes, or ligaments, accompanying if not causing uterine disease: the uterine cavity, the endometrium, and the cervical mucosa have been the centre of treatment, and of treatment too violent for the good of the sensitive circum-uterine tissues which are intimately connected by lymphatic channels and readily respond to any attack upon the endometrium. A displacement of the uterus was rectified by the insertion of a pessary regardless of cause or surrounding conditions: what was the consequence? Although the uterine catarrh perhaps yielded to the application of iodine or nitrate of silver, though the discharge diminished, the patient grew worse; her pelvic suffering increased, and then, especially if no improvement was found in the discharge, the practitioner blamed his own timidity, and resorted to stronger intrauterine applications, with still worse results. If he did not succeed in relieving a displacement by the pessary, the instrument did not fit and another was tried; if suffering was caused, the patient was urged to endure it, as the displacement would be cured, and she would be well if she would only stand the pessary, and so women were brought from bad to worse.

Physicians have come to distrust both pessary and intrauterine medication; both have become a routine practice and both have caused much mischief, mainly by the irritation of peri-uterine tissues and the aggravation of perimetrie inflammations which so often co-exist, or even pre-exist, and cause the comparatively trifling intrauterine disease, which has been made the centre of attack. I do not wish to be understood to say that intrauterine applications are to be consigned to oblivion or that

they are improper; I fully appreciate their importance, I consider them necessary and irreplaceable in primary morbid conditions of the endometrium, or in such as are not accompanied by inflammations of the surrounding tissues. Nor would I say that the pessary is out of place in malposition of the uterus due to mere relaxation of the supporting tissues; on the contrary, both the intrauterine application and the pessary are indispensable, all-important for certain uterine disturbances; but these are only some of the many and varied forms of the diseases of the pelvic viscera, whilst to the routine gynecologist the uterus is the centre of all female complaints, to him diseases of women are womb troubles, inflammation as shown by discharge is treated with the iodine swab, and displacements are corrected by the pessary. The excellent and often astonishing results at times achieved by these methods of treatment have caused them to become routine, and now, since they are thoroughly popularized, the evils resulting from them become apparent to a degree that other methods are looked for, and the dry cotton treatment thoroughly meets the wants of the practitioner. Compared with fluid applications to the endometrium, it is without danger, we avoid the irritation of the sensitive cavity; the action is mild and continuous, not momentary and intense. Compared with the pessary, it affords support without pain and without danger of inflammation; and compared with both, the dry treatment, for whatever purposes it be used, benefits co-existing cellular or circumuterine inflammation, frequently occurring, often occult; co-existing disease which is aggravated, or inflammation which is excited by the pessary or the intrauterine application, is benefitted and relieved by the dry cotton treatment. The good results of the treatment depend to a great extent on the good effects which these applications invariably exercise upon pelvic inflammations, recognized or not, which are invariably aggravated by the old routine treatment.

Materials used.—The materials used in this treatment are powders, more or less finely powdered or impalpable, according to the purpose, and fine vegetable and animal fibre, cotton, wool, and jute, plain and absorbent. As in all medication, a greater or less variety may be used; many are kept on hand, but the fancy or experience of the individual practitioner soon confines him to a few preparations upon which he relies. I will

mention such as I have used in the order of their importance and the frequency with which I use them.

Powders.—Bismuth, iodoform, boracic acid, borax, alum, tannin, oxide of zinc, soda, and charcoal.

Cottons.—*a.* For mechanical purposes or as carriers: wool and plain cotton; less useful are jute, medicated gauze and wool absorbent with corrosive sublimate.

b. Cotton for medicinal purposes.

1. Antiseptic: borated, iodoform, salicylated, and carbolated.

2. Alterative: iodized.

3. Astringent: iron cotton (hemostatic), styptic (66 per cent), tannated (7½ per cent), alum (10 per cent), and alum (5 per cent).

Instruments necessary are: a bivalve speculum and a Sims speculum; one or the other being preferable according to the position in which the tampons are to be placed. A long, strong dressing forceps, best with a catch: a tenaculum to steady the uterus whilst the tampon is being placed; a number of powder blowers for the proper distribution of the remedy.

The limited use which is as yet being made of powders in uterine treatment has caused little demand for such an instrument, hence only stray samples of the proper size and form are found even in the hands of our best instrument makers, and these are imported. The powder blower should be similar to the one used for nose and throat, with a long straight tube, but a much larger magazine, the quantities used being greater in proportion.

The instrument which is still lacking is one by means of which powders can be applied to the endometrium. I have not yet seen one which would answer the purpose, and the best instrument makers, appreciating the difficulties in the way of successfully accomplishing the task, have not given me much hopes of attaining the desired device. Such as I have seen are too clumsy or too easily clogged. As I believe that powders properly distributed would, for many purposes, be the most efficacious application to the cavity, I should consider a serviceable instrument of this kind the stepping stone to a decided improvement in gynecological therapeutics.

POWDERS.

For most purposes the impalpable powder, as manufactured by Mallinekrodt, of St. Louis, or Wyeth, of Philadelphia, is preferable, adhering more closely to the surface, being more evenly distributed, and less liable to clog.

How the powders act.—The action of the powder is both mechanical and medicinal. We use in the main the powder for its medicinal effects, but in gynecological practice we derive so favorable an effect therefrom, on account of the secondary mechanical action which, in many cases, furthers the end in view as much as the medical properties for which it is used; thus, whilst we use iodoform upon a raw surface as an antiseptic and stimulant, or tannin on the vaginal walls for the purpose of strengthening and contracting them, we at the same time cover and guard the irritated surface, and the iodoform or tannin, in addition to its specific action, has the effect, which any powder would have, of protecting and drying the surface, which is desirable in most cases in which we use any application, as most pelvic disorders are accompanied by hypersecretion of vaginal or uterine mucosa. The remarkable results attained by the dry treatment are due in a certain measure to the mechanical properties of powders as well as the cottons, as both serve to mitigate and to overcome a condition which is a frequent and annoying accompaniment of uterine disease, but which is usually overlooked, that is, the over-acidity of the vaginal secretion, and the less important, though by no means indifferent property of the uterine secretion—an excessively alkaline condition. These irritating fluids are either absorbed by properly prepared cotton and rendered harmless, or absorbed, dried, and neutralized by the powder upon the surface of the mucous membrane, and I might say that the excellent results I have achieved from the use of subnitrate of bismuth, which I applied for a long time without knowing the precise reason for the admirable effects produced, are in the main due to the mechanical properties of the powder, which forms a protecting cover by coating the surface, dries the secretion, and destroys its virulence by neutralizing its excessively acid character; some even claim a certain antiseptic property for it. Bismuth is as important in the treatment of the uterine and vaginal mucosa as it is in the management of morbid conditions upon other mucous surfaces.

The action of the powder is twofold in its nature: 1, direct upon the surface which is reached, and this is both *a*, mechanical and *b*, medicinal. Then we have, 2, the indirect, always medicinal, effect of the powder by absorption upon the surrounding tissue; so that the practitioner, if he uses his remedy judiciously, will obtain a variety of effects. The medicinal effects I need not speak of, as these are well-known and identical with the effects of similar remedies upon any other mucous membrane. Alum is the astringent which I prefer, as it can be used pure if the surface is but lightly dusted with it; tannin, the sulphate of zinc and the oxide I do not use as freely, as these must be applied with bismuth or bicarbonate of soda; very small quantities suffice to abrade the surface if used pure. Bismuth and iodoform I have found of most general use, by reason of the agreeable mechanical effect exercised by their presence upon the mucosa, in addition to the medicinal action of the drug. The dusting of the vaginal walls with the subnitrate of bismuth is a valuable addition to the treatment whatever it may be; its soothing influence is like that of the lycopodium powder in the intertrigo of infants, a protector, desiccator, and antacid, but by far more efficacious. Heretofore it has been the custom to make a violent application of iodine or nitrate of silver to the uterine cavity; careless practitioners have not even mopped the superabundance of fluid which gathers in the cul-de-sac, and the patient was sent to her home or about her business with the diseased surfaces, not cooled and protected, but heated, charred and irritated. In most chronic cases, the pelvic tissues are all more or less affected, so also the vaginal walls, and the friction of these abraded, sensitive, often hypersecreting or excessively acid surfaces against one another serves as a decided irritant; whatever the benefit expected may be, the local irritation reflects upon the nervous condition of the patient, and thus the slumbering embers are fanned to a flame. Irritation, on the contrary, is allayed and the comfort of the patient increased by the dry treatment, by protecting these surfaces with iodoform or bismuth, in case of excessive acidity of the secretions bismuth being preferable. The tampon of absorbent cotton serves to separate the surfaces, to protect them against each other, and to keep them dry. Where disinfection is desired and the odor of the iodoform not borne, charcoal may be added, or borax may be used, which,

next to iodoform and bismuth, is perhaps the most serviceable in the great mass of cases. Charcoal alone is an excellent antiseptic, sedative, and desiccator.

How used.—The powders should be distributed upon the surface to be medicated with the powder blower; as stated, the one I have been in the habit of using is similar to that used for larynx or nares, but with a larger magazine, holding from a half to one ounce; a number must, of course, be on hand, containing the various powders to be used. The receiver with compressed air serves a very excellent purpose if the powders are kept in bottles with proper attachments for such use; an insect powder blower is a very cheap and serviceable contrivance if the nozzle is somewhat lengthened. After resorting to such treatment or manipulation as the case may demand, the surface of cervix and vagina is dusted with powder and the tampon then inserted. As a preparatory measure, the parts must be thoroughly dried with absorbent cotton; the powder should then be dusted over the surface of the cervix and vaginal walls, such portions as may more particularly demand treatment being more thickly coated. The powder, of course, must be used in quantities to meet the necessities of the case; bismuth, borax, soda, and charcoal may be very freely used; also iodoform: in rare cases only, if an idiosyncrasy exists, is an unpleasant constitutional effect visible, yet this is hardly to be taken into account, as I may say that only one marked case of toxic effect from iodoform so used has occurred in my practice, and that was an excessively nervous lady in whom I have observed striking idiosyncrasies in regard to other remedies as well: alum and tannin in the smallest quantities caused prostration and distressing itching, whilst carbolic acid, added in even the smallest quantities to the vaginal douche, caused the greatest physical and nervous prostration. Alum and tannin must be used with some care, best with bismuth, soda, or charcoal, and if pure, in moderate quantities only, a free use causing violent local effects: pain with excoriation of the surface. When used pure, only the surface to be affected should be delicately sprinkled. Salicylic acid, sulphate or oxide of zinc must be strictly confined to the surface to be affected, and only a very thin coating given. If a more diffuse effect is desired, it is best to mix them with an indifferent powder, such as bismuth, charcoal or corn starch, in the proportion of one to four. Borax

may be freely used. Several powders can be used with advantage at the same time; for instance, if the cervix be lacerated or eroded, raw, the uterine discharge offensive, we may coat these parts freely with iodoform, using bismuth upon the vaginal walls if the secretions are profuse or acid; tannin or alum, if the parts are relaxed, flabby, and it is desirable to strengthen and contract. Thus several indications may be met in one and the same treatment.

The insufflator is the proper means for the administration of powders since we are aided in treatment by medicated cottons. Formerly I was in the habit of applying the powder within the tampon of cotton, which is an excellent method where the medicated preparation is not to be had, or where we desire to strengthen its effect; thus, if we desire an astringent effect upon the vaginal walls or pelvic tissues, we may take a knife-point full of alum or tannin and carry it in the centre of a small cotton tampon; as the secretions slowly saturate this, the powder is dissolved, and a gentle and continuous action is thus produced. In this manner we can crudely supply the place of the medicated cotton, or utilize the tampon where such is not to be had. It is an excellent method, as it guards the tissues from the direct effect of a strong remedy, and, what I deem so important in this practice, it causes a continuous action. In fact, such powders, which must be used with the greatest care when placed directly upon the surface, like salicylic acid or alum, are better applied in the centre of a small cotton tampon.

I would caution against the use of powders sprinkled upon the surface of the tampon, as advised by some. It is evident that by this method we can in no way gauge the quantity used or control its even and proper distribution, and, moreover, as it is introduced, surfaces which should be guarded from the effect, at least of sharp remedies, urethra or the mucous membrane of the vulva, may strip off some of the coating. It is neither cleanly, exact, nor safe.

Impalpable powders are very valuable in gynecological treatment; however, I look upon them in the main only as a part of, or an addition to, the more important tampon treatment. The mechanical effect is always a good one in serving to protect the parts and take up the secretions; it is equally valuable in neutralizing the injurious effect of excessively acid secretions, so common in the majority of pelvic troubles. The effect of this

discharge upon the parts, indirectly upon the system, has been too long neglected, as not infrequently much of the prostration and nervous irritability of the patient is due directly to this cause.

THE TAMPON.

Method of action.—The most important feature of the treatment is the tampon which I use :

First, on account of its *medicinal* properties, as a carrier of the remedial agent ;

Second, mechanically as a *support* to hold in place the uterus or other of the pelvic viscera, and as a *compressor* ;

Third, as a *stimulant* or *alterative* to the tissues.

For whichever of these purposes it may be used, it serves, in addition, by its mere presence :

Fourth, to *splint* and steady the parts, *to give rest* ;

Fifth, to *cleanse* and render them aseptic by absorbing the discharge, keeping the vaginal walls dry and clean ;

Sixth, as a mechanical *protector*, keeping the tissues apart, preventing friction and irritation, as well as exposure to cold.

The first three objects are those for which the tampon is mainly used ; the others are advantages which follow of necessity this method of treatment. Even the third, an extremely important purpose served by the tampon, the alterative or stimulating effect upon the tissues, and for which alone I often use it, inevitably follows its application for either the purpose of medication or support, if judiciously applied. We know well that the tampon has long served gynecologists, but rather for other purposes of which I will not here speak, as they are comparatively of trifling importance. It has been used for the purpose of checking hemorrhage as a compressor, by packing the vagina, dangerous and hardly permissible in gynecological practice proper. It likewise has served to dilate the canal or to stretch contracting tissues, and hold in place intrauterine stems, pencils, or some vaginal dressing.

Medical purposes.—Medicinal agents are applied by means of the tampon, either by inclosing the remedy in the form of a powder within it, or by using a medicated cotton covering over the elastic body of the tampon, and of this alone I shall speak, as it is by far the most cleanly and satisfactory mode of treatment and an important feature of the dry method. I cannot suffi-

ciently express my gratitude to Am Ende, the Hoboken chemist, whose fertile brain has furnished us with the useful preparations now in the market. There is no neater method of medicating tissues than the soft fibre of cotton, cleansed and impregnated with the remedy.

In resorting to this treatment, the practitioner is obliged to regard the various organs and tissues; the uterine mucosa ceases to be the centre of attack—a small surface which has been plied with powerful remedies—and he is forced to a more rational method, that of treating the mass of surrounding tissue, which is almost invariably affected at the same time. The attention of the profession has too long been rivetted upon the uterus and especially the uterine mucosa, to the utter disregard of ovaries, tubes, ligaments, and cellular tissues, which are, I may safely say, of even greater importance, but not being within sight, not within direct reach of an instrument, their morbid states not at once made evident by a discharge, are easily overlooked; yet I look upon each one of these as more important than the uterine mucosa, which, heretofore, has formed the centre of attraction in gynecological therapeutics; the surgeon alone has passed beyond to a broader view. The discharge thrown off by the uterine mucosa, next to the displacement of the organ itself, was the most important evidence of disease, and all efforts centered in checking this discharge and replacing the organ regardless of cause.

By applying the remedy by means of the cotton tampon, all the pelvic tissues are reached, the muscular structures of the uterus as well as the mucosa: medication is general, as the disease usually is, and the treatment by far more rational than it has been heretofore when directed only to the lining membrane. The effect of the remedy so applied, which is mild and continuous in its action, is twofold: direct upon the surface with which the tampon is in contact; and indirect, by absorption, upon the surrounding tissues. The kind and amount of material used in the tampon must be chosen accordingly; the kinds of cotton I use, of course, depend upon the object to be attained, the medical properties of the substances with which the cotton is impregnated being well known. Seven and a half per cent tannated cotton and five and ten per cent alum cotton serve as astringents: a thin film of iron cotton does excellent service for the same purpose. Upon an eroded

cervix, if no other object is to be attained, a tampon of iodoform cotton makes an excellent dressing: if antiseptis is desired, salicylated cotton or cotton with corrosive sublimate answers well; a thin film of styptic cotton, with sixty-six per cent of iron, is admirable as an agent to check bleeding, whether external or internal, upon vaginal or cervical mucosa, or in the cavity itself. The excellent effects of such medication are perhaps best demonstrated by the iodized cotton, five per cent of iodine, as compared to the painting of the cervix or vaginal vault with the tincture. The latter is painful in its action, whilst the tampon of iodized cotton acts mildly and continuously. The medicated tampon being placed in contact with the tissues to be reached, a second tampon serves to hold it in place, and to prevent the evaporation of the remedy which in this way is all absorbed, producing a much more lasting effect than the painting of the surface: in the latter the blistering effect of the tincture is prominent: in the former the effect of the iodine itself.

2. *Mechanical effect.*—In the mechanical effect of the tampon centres the value of the dry method. Whilst the medicated tampon is admirable for the application of remedies to the pelvic tissues, acting mildly and continuously, directly upon some, by absorption upon all, it is most important as a support to the displaced uterus, holding it in place without causing irritation, and removing the strain from the diseased ligaments. Too often the disease of the uterus or its mucosa is only secondary, the result of displacement due to morbid conditions of the bladder or bowel, and in many instances to the contraction of diseased ligaments or to low forms of cellular inflammation, and by replacing the uterus by the tampon, or at least approximating its normal position and holding it there, we at once relieve the more distressing symptoms and attack the causative morbid conditions: the circulation in all the pelvic tissues is improved, hence the venous congestion which mostly accompanies these chronic inflammations is diminished, and, as a normal position is approximated, the strain upon the ligaments and vaginal walls is lessened and opportunity afforded the tissues to recover. The cotton tampon affords an excellent support to the displaced ovary, which would never bear the pressure of a pessary.

The pressure of the elastic wool, jute, or non-absorbent cotton tampon is borne by even the most sensitive tissues; but in these

cases, as in fact in all, the tampon must not be firm, the very quality which is looked upon by some as important ; this should always be avoided. Whilst the pessary only serves to retain the uterus in place by pressure upon a limited space, stretching and often irritating the tissues, rarely assisting contraction and restoration, the tampon is curative and will accomplish this. It is a great mistake to make the tampon supporting by reason of its size, thus distending the tissues and holding them for the time being only, whilst the prop is in place. The supporting tampon should be indeed a direct support like a pessary, but like a pessary well placed, not supporting by its mass, but by a judicious insertion by leverage. The supporting tampon so used is directly curative, as the mechanical action is assisted by the medicinal agent with which it is impregnated. Whilst the circulation is improved by rectification of the dislodged viscera, the enlargement diminished, the strain taken off, healthy action is furthered by the astringent effect of the remedy used. The vaginal tissues are not stretched, but relaxed and approximated to their normal position, and one of the most important objects accomplished is the stimulation, the improvement in the tone of the tissues, especially the ligaments and vaginal walls.

For the purpose of support, the tampon should be elastic and of such form and size, so placed, as not to distend the tissues ; the material must be such as to retain this elasticity as far as possible, hence the absorbent cottons, and the medicated cottons alone, are not serviceable, the best material is wool, jute, oakum, or simple cotton. I have used the ordinary cotton wadding a great deal, but am now relying equally upon wool, which is more elastic and less absorbent. Absorbent or medicated cotton is not serviceable, as it is soon impregnated with the discharge, and yielding to the weight of the superimposed organ, is compressed into a small doughy wad ; hence I would caution against the use of absorbent cotton as a supporting tampon, though it is becoming quite popular with the gynecologist who endeavors to treat his patient well, and uses the fine, soft, absorbent cotton in place of the ordinary wadding for the tampon. With the best intention, he renders her a very poor service.

The glycerin tampon likewise should never be used as a supporting tampon, it being a heavy, matting mass which can

only hold the organ in place by sheer force of quantity and distention of the parts.

In virgins especially, the elastic, medicated tampon is the proper agent for the correction of displacements, a normal relation of the parts being attained, not only without distention, but by an improvement in strength and circulation which is very beneficial.

Well-prepared sheep's wool, fine, white, and clean, makes the best supporting tampon, and as this can be had in a very perfect shape, it is not always necessary to coat the tampon with a layer of fine carbolated absorbent cotton; the most sensitive hardly experience irritation from the wool, which can be had in the market even finer than the absorbent corrosive sublimate wool made by a Boston firm for medical purposes. In the supporting tampon we do not wish any absorbent properties, and the antiseptic is furnished by the powder used; it is the fat in the animal fibre which prevents absorption and aids in retaining the elasticity which makes the pure wool tampon superior to all others for supporting purposes.

If jute or oakum is used, which is rough and irritating, annoying and injurious in most cases, the supporting tampon must be covered with a good coating of absorbent or medicated cotton, according to the effect desired.

The great advantage of the supporting tampon lies in the fact that it is curative; that it not only may, but it must be used in the most sensitive and inflamed condition of the parts; that it not only improves the position of the parts, but reduces the inflammatory condition in such cases where the persistent use of the pessary has increased or created inflammation. It is most decidedly curative, as it combines, with the mechanical property of a support, a medicinal effect by the remedial agent it carries, by pressure checks the superficial congestion and mechanically exercises an alterative effect upon the tissues with which it is in contact; whilst the pessary, at best, is only borne, and prone to irritate and inflame by contact. Many, I might almost say the majority, of pelvic troubles which come under treatment have been caused by, or are combined with, displacement of the uterus or ovaries, relaxation or contraction of the ligaments and vaginal walls, and much of the suffering and nervous irritation, and many reflex neuroses, are dependent upon such mechanical displacements of the viscera. The

tampon as a support, in rectifying at least to some extent such displacements, at once affords relief, the relief continuing whilst it remains in place. The remedies used, the medicines applied, in this method of treatment in the form of the medicated tampon, at the same time serve to improve the relative position of the parts. It is the friction of the eroded and everted lips of the lacerated cervix against the posterior vaginal wall which causes the annoying backache in the heavy subinvolted uterus which lies low in the pelvis.

Even the small tampon properly placed, bringing the cervix more into the vaginal axis, at once relieves those distressing symptoms. Thus the fundus or the cervix, pressing against bladder or urethra, can with ease be replaced, at least sufficiently to relieve the distressing symptoms caused. Much is gained if the more annoying symptoms are at once eased: the intense nervous strain is removed from the patient and an opportunity afforded her to rally her wasted energies, to gain strength; medication and reposition can then progress more satisfactorily with continued treatment.

In by far the greater number of those cases in which treatment is necessary for malposition of the uterus, the displacement is backward, the most favorable for the tampon treatment, as it is indeed for the pessary. The tampon can always be used, whilst the indications for the pessary are limited: it is especially in inflammatory conditions of the retro-uterine cellular tissue or posterior folds of the peritoneum, and in injury to these parts, that the advantages of the tampon are evident; by this alone can the position of the parts be improved, and the sensitive retro-uterine tissues and ligaments do not resent the soft cotton tampon. 1st. The medicinal agent is carried precisely to the point where it is most needed. 2d. The normal position of the parts is approximated; the circulation is improved; venous congestion reduced; and 3d. Sufficient pressure is exerted upon the parts to produce the stimulating or alterative effect which is desired.

3. *Stimulating and alterative effect.*—Mechanically the tampon may be used to exercise a stimulating or alterative effect upon the tissues with which it is in contact: to strengthen, harden, or soften, as the indications may be. This, with medication and support, is one of the most important uses of the

tampon, but I rarely employ it for this purpose alone, almost invariably I combine with it medication or support, generally both.

The action of the tampon so used is to the pelvic tissues what the elastic bandage is to external parts, by the pressure of its mass upon the tissues, first, the doughy, edematous thickening is diminished and healthy action promoted; second, venous congestion is overcome by compression of the vessels and capillaries; third, active changes are inaugurated and hyperplasia is reduced. The advantages of pressure for the control of these conditions, has been appreciated. The importance of pressure as a means of overcoming these conditions is evident, and repeated efforts have been made to utilize this valuable agent, prominent among which is the clay pessary of Pallen and the more reasonable cotton wool packing of Taliaferro. I can well indorse both Dr. Pallen, who lays great stress upon the utero-vaginal rest that is secured—which he deems all-important in the treatment of obstinate displacements, especially if complicated with acute cellulitis and edema of the pelvic organs—and Dr. Taliaferro, who claims that the pressure diminishes, first, the blood supply; second, increases absorption; third, that it destroys hyperplastic tissues by retrograde metamorphosis; fourth, diminishes nerve activity; fifth and finally, that it rectifies displacements. Excellent results have been accomplished by these methods, in which the packing is used for purposes of pressure only, but this is most unnecessary and a simple waste of time and material; properly utilized, the packing can do more and will even accomplish the object mainly desired to better advantage, if applied so as to combine with pressure medication and support.

The dry tampon treatment affords these advantages in a degree in every case; a certain stimulating and alterative action is always exerted. The tampon, medicinal or supporting, is never crowded so as to distend the vagina, hence does not compress the tissues so thoroughly, and it is packed only around the parts affected, to be held in position or medicated; as a rule, only around the cervix, in the cul-de-sac and upper part of the vagina; the alterative effect is hence less marked than in a packing such as that of Taliaferro, but constant and equally certain. I look upon the stimulating, alterative effect, to a certain extent a natural sequence to the treatment, as a most desirable result and as almost equal in importance to that of medication or support

although the action of the tampon as generally used in the dry treatment, and not especially applied for alterative purposes, is not so decided, it is sufficient in most cases; as it is continued and combined with other effects, the object in view, the end desired is attained even more readily.

I look upon the alterative properties of the tampon as one of the strong points of the dry treatment, because the great mass of cases, at least the more troublesome and difficult ones in gynecological practice, are chronic, accompanied by venous congestion, hyperplasia, thickening of the tissues, often of an edematous character. In all of these a beneficial effect is exerted by the pressure of the tampon, whatever the purpose for which it is used may be. Moreover, cellulitis, in one form or another, is a frequent condition, and the indurated or thickened doughy tissues of the utero-vaginal tract resulting from passive hyperemia, caused by constriction or compression of vessels and tissues, need precisely such pressure as is exerted by the elastic cotton tampon used in the treatment.

(To be concluded.)

IS DENTITION A CAUSE OF DISEASE?¹

BY

GEORGE WYTHE COOK, M.D.,

Washington, D. C.

THE process of dentition has interested me since I began the practice of medicine. It is perhaps the most striking phenomenon occurring in the development of the human organism, because we *see* the hard, bony teeth emerge in definite order from the softer tissues of the gums and range themselves uniformly in the jaws. There is nothing comparable to it in the growth of the body. This eruption of the teeth is viewed with great solicitude by the anxious mother, and no little concern by the family physician, and many years ago this proverb was current, that "parents could not truly rejoice in their children

¹ Read before the Washington Obstetrical and Gynecological Society, December 17th, 1886.

before they had cut their eye teeth." Having been one of a large family of children, I was no stranger to the notion that dentition was a cause of disease, and sometimes of death, so that as a student of medicine my mind was well prepared to receive the teaching of the masters—that the eruption of the teeth is a fruitful cause of disease—and the doctrine was cherished as having been "delivered by the saints," and was subject to "no variation or shadow of turning."

And this doctrine seems still to be in full force, for, by reference to the text-books of to-day, I find that many of the diseases of infancy are attributed to the evolution of the teeth, and in scanning the mortuary tables in the "Report of the Health Officer of the District of Columbia for 1885," I find as many as *sixty-six* deaths ascribed to dentition as the primary cause. If it be true that dentition is the cause of so many deaths, then, indeed, has nature been lamentably inadequate to the necessity of properly providing for the growth and development of children, in making the evolution of the teeth, which is a *necessary* and *inevitable* process, a cause of death, and thereby defeating her own purpose. From observation and thought, however, I am persuaded that nature has not been at fault, but the error lies in assigning a cause for the disease, and dentition is a most convenient scapegoat. I know that this opinion is at variance with the popular idea, as well with the bulk of the practitioners of medicine as with the laity, and the purpose of this paper is to stimulate thought upon the subject, that nature may be justified and the ailments of infancy assigned to their true causes. To this end, it will be of interest to consider the development and eruption of the teeth.

According to Goodsir, the teeth are developed from the mucous membrane covering the edges of the maxillary arches; beginning in the upper jaw, about the sixth week of fetal life, by the formation of a depression, called the primitive dental groove, from the floor of which the germs of the milk teeth are developed. These germs, which are formed by a conical elevation of mucous membrane, make their appearance in the following order: at the seventh week, that of the first deciduous molar of the upper jaw; at the eighth week, that of the canine tooth; the incisors about the ninth week; the second molar papilla at the tenth week. And the germs of the teeth of the lower jaw follow in the same order, being developed a little later. After

the papillary stage of development, the dental groove contracts and is converted into follicles for the reception of the papillæ, the follicles becoming the alveoli lined by periosteum.

From the follicular to the saccular stage the development is rapid, the latter being completed at the end of the fifteenth week. The deeper portion of the primitive dental groove is now closed in, but that near the surface of the gum still remains open, and is called the *secondary dental groove*, from which are developed the ten anterior permanent teeth. About the fourteenth week, a depression is formed behind each of the sacs of the rudimentary milk teeth. They are formed from before backwards, and are the rudimentary follicles of the permanent teeth. The secondary dental groove closes in and the follicles become closed cavities, which elongate and recede from the surface into the gum behind the sacs of the deciduous teeth, and a papilla projects from the bottom of each, which is the germ of the permanent tooth. The permanent molar teeth are developed from the primary dental groove. The rudiment of the first one is formed during the fourth month. The papilla of the second permanent molar appears at the seventh month after birth, and that of the wisdom tooth at the sixth year. It will not be necessary, for the purpose of this paper, to detail the manner of the growth of teeth; it will be sufficient to say that it is a continuous process from the seventh week of fetal life to the twenty-first year after birth, when the wisdom teeth make their appearance through the gums. It will not be superfluous, however, to recount the order and time of the eruption of the milk teeth. This is set down as occurring as follows: The central incisors at the seventh month; the lateral incisors from the seventh to the tenth month; the anterior molars from the twelfth to the fourteenth month; the canines from the fourteenth to the twentieth month; and the posterior molars from the eighteenth to the thirtieth month. This is the order in which the teeth usually appear, but to this there are some exceptions, and it may be interesting to relate here a few striking examples of departure from the ordinary rule.

"The younger Pliny states that the renowned Marcus Curius, Consul of the Roman Republic two hundred and seventy years before our era, had a full set of teeth at birth. This was the reason of his being named *Dentatus*." (A. Jacobi on "Dentition.")

Richard III., whom Shakespeare makes speak of himself as—

“Cheated of feature by dissembling nature,
Deformed, unfinish'd, sent before my time
Into this breathing world, scarce half made up,”

was born with teeth, and to this circumstance was attributed his cruelty, and is thus referred to by Queen Margaret when upbraiding the Duchess of York for having given birth to so terrible a monster :

“From forth the kennel of thy womb hath crept
A hell-hound, that doth hunt us all to death,
That dog, that had his teeth before his eyes.”

But the most remarkable case on record is that of a “Spanish dwarf who had all his teeth when born, and never lost one of them, got a beard in his seventh, and was the father of a son in his tenth year.” (A. Jacobi on “Dentition.”)

There are other cases of early dentition reported, but these will suffice. I will mention here a few cases of third dentition.

A patient of mine, an old colored woman, now about eighty years of age, at the age of seventy lost the last molar from the right lower jaw; in a few months afterward, a new tooth appeared and still remains. In the “Medical Commentaries of 1787,” this case is reported: Mary Wood, 98 years and 5 months old, suffered from asthma from early youth; she chewed tobacco at the age of fifteen years. Half a year ago she got twelve molar teeth, eight of which still remain, though they are all somewhat loose. “A country laborer in the south of Scotland lost all of his teeth by the time that he was sixty years old; about half a year afterward a new set appeared, all of them within the space of twenty days, and they continued fresh and firm for thirty-four years. He is now ninety-six years of age, and within the last two years has lost three teeth.” (From “Medical Commentaries, 1784.”) In this connection I am permitted to say that the wife of one of the Fellows of this Society has never shed the *first* lateral incisors from the upper jaw.

Of all the remarkable cases on record relating to the teeth, the following, which was reported a century and a half ago, is the most wonderful. “There lived at Leipsic a noble lady who had five children; with every confinement she cut a molar tooth. As soon as one of her new teeth got loose, the child who was born at the time when it was cut was affected with some severe

disease. If such a tooth fell out, she was always certain that the corresponding child was surely going to die. And so it happened, adds our honest author, all the five children died before the mother." And Jacobi, from whom this is quoted, adds that "thus you perceive that, as it is said to be customary nowadays that children die from their own teething, it was customary for children in olden times to perish from the dental troubles of their mothers."

I have mentioned these cases of irregular dentition simply as curiosities. The important fact to keep in mind is, that nominally the teeth are developing from the seventh week of fetal life up to about the twenty-first year of age. The term dentition, as ordinarily used, means the period of the eruption of the temporary teeth. And those who believe that it is a factor in producing disease limit its causative influence to that period, that is to say, from the seventh month up to two and a half years. But if the teeth have anything to do with producing disease, would it not be as reasonable to say that they so operate during the *entire time* of their development as to confine their deleterious influence to the eruptive stage? What is the peculiarity of the teeth at this eruptive stage that would lead us to believe that they had an influence in producing disease? *Nothing*, only we expect to *see* them emerge from the gums and present themselves to our *anxious* view. The growth of teeth is not different from the growth of bone elsewhere, and there is nothing in the fact that the teeth come through the gum, for this is a simple process, accomplished by the gradual growth of the teeth and the no less certain absorption of the gum.

But there is no symptom, from the slightest rash upon the skin to the most profound nervous manifestation, that has not been attributed to dentition as a cause. But how does this process cause disease? There is no uniformity of sentiment upon this subject. Some refer the difficulty to *backward* pressure upon the sensitive tooth pulp. Others, and perhaps the larger class, to the *forward* pressure upon the gums. And a French writer, whose name I do not now recall, promulgated the remarkable idea that the advancing tooth produced a pruritus or tickling of the gums that was so persistent and harassing as to completely upset the nervous system and thus produce the "many diseases of dentition." And again, Dr. Hayden, of Baltimore, years

ago wrote an elaborate thesis, in which he attempted to show that the teeth were enveloped in an acrid humor which was the fons et origo of all the trouble. With these contrary views, no one of which is supported by positive evidence, it is not difficult to discredit all of them. The "humoral" and "titillation" hypotheses may be dismissed without discussion, and there is not the slightest evidence of any injurious pressure either "forward" or "backward" in the growth of the teeth. Forward pressure upon the gums, if such there be, would be insignificant in producing disease, as this tissue is "remarkable for its limited sensibility." There is no pressure backward upon the sensitive tooth pulp, for the tooth is pushed upward by the growth of the fang below, and there is no resistance, for the gum is as certainly absorbed in front of the advancing milk tooth as the roots of the temporary teeth disappear on the approach of the crowns of the permanent teeth.

The facts are, we grow up with the notion instilled into our minds by our mothers and nurses, and by the doctor, too, for that matter, that dentition is necessarily a painful and dangerous process, and during the *period of dentition* so many diseases do occur that it has become a *habit* to charge them to the teeth as the cause. But this is not reasonable, for nature would save the individual from harm in a process that was necessary and inevitable.

There is as great diversity of opinion as to the treatment of dentition as there is as to how it produces disease. *Soothing* applications to the gums, from the old-time remedies of "blood from the recently wounded cock's comb" and "fresh brains of hares" down to the most modern local anesthetic, hydrochlorate of cocaine. All sorts of lotions and unguents, frictions with hard and soft substances. Free scarification of the gums was recommended by John Hunter and Dr. Churchill, and Marshall Hall repeated the operation as often as *several times a day*. The great Trousseau, however, said this practice was useless, and I believe the same may be said of all the other remedies proposed.

A physician is called to see a child and gets this history from the mother: Some days ago it was taken with vomiting, and soon after diarrhea began, which has continued to this time. It has been very fretful and restless. Remembering what her mother had told her, she said she had not considered it necessary to

do anything, as she thought the diarrhea was beneficial, and suggested that, as the child was teething, the trouble was to be expected. But she was now worn out with watching and waiting, the tooth did not come through and baby was getting worse all the time, so she had been compelled to send for the doctor with the hope that he could do something to speedily relieve the little sufferer. The doctor finds, in addition to the above symptoms, that there is fever, and, upon pressure, abdominal pain. He learns also that the child nurses with great avidity and that it has been allowed to do so without stint, notwithstanding it vomits the milk soon after it is taken. Upon examining the gum he finds it swollen, lacerated, and contused over the advancing tooth. The mother explains that the poor thing was suffering so that she thought that she could help the tooth through, so she had been rubbing the gum with her rough thimble or finger-nail. The doctor will at once recognize that he has a case of entero-colitis with which to deal, but to what cause will he attribute the difficulty? Ten to one he will coincide with the suggestion of the mother, that dentition was the cause. That is the *easiest* thing to do and it is *entirely* satisfactory to the mother. But putting aside all preconceived notions, is it reasonable? Consider the environment of the child, errors in diet, it is of an age when the mother or nurse thinks it may be taken to the table and given "a taste" of all that is before it, or it may itself pick up and swallow some offending substance. Failure to observe the laws of hygiene, want of cleanliness, and improper clothing, atmospheric conditions, how the mother dreads the "child's second summer!" but no complaint has yet been heard against a second winter. Do the teeth hibernate?

Taking into consideration these facts—that certain atmospheric conditions, bad hygiene, and errors in diet will produce the same kind of diseases in the adult as in the child, and that dentition is a *necessary* and *inevitable* physiological process, is it not more reasonable to attribute the diseases of infancy to other than a *physiological* cause?

If I have succeeded in fixing your attention upon this subject, and you will consider it deliberately, helpless infants will be spared much suffering and many lives will be saved. But so long as the physician inculcates the doctrine that the evolution of the teeth is a cause of disease, the laity will accept that doc-

trine, and anxious mothers will stand idly by *waiting for the coming of the teeth* and hoping the trouble will soon be over. But, alas! precious time has been lost, and too often the penalty of such neglect is the death of the child.

REMOVAL OF IMPRISONED HAIRPIN FROM THE PREGNANT UTERUS, INTRODUCED BY THE PATIENT TO PROCURE ABORTION.

BY

J. HENRY FRUITNIGHT, A.M., M.D.

ON the 10th of February, Mrs. S., æt. 24, appeared at my office in great trepidation and related to me the following history: She said that she was pregnant about two and one-half months. She had already borne two children. As she wished to rid herself of the fetus, she concluded to follow the advice of a "woman," whose identity I could not ascertain from the patient. This "woman" had told Mrs. S. "to use a bent hairpin upon herself and she would certainly be freed from her burden."

Accordingly about 7 or 8 A.M. of the above-mentioned date, Mrs. S. introduced a hairpin bent as illustrated in the figure (1) into her uterus. The longer limb of the hairpin measured four and a half inches, and the shorter one, one and a half inches in length. She asserted that she had introduced the instrument without difficulty. But when she attempted to withdraw it, she found that she could bring it down only to a certain point, beyond which it could not be dislodged. She made several vigorous but ineffectual attempts to release it, and only desisted in her efforts when blood made its appearance, which terrified her greatly.

She presented herself at my office at 2 P.M., about seven hours after the introduction of the instrument. I endeavored at first to remove it by traction, but also failed; for it always caught at some point, thus preventing its extraction. Then I asked my friend, Dr. Chas. E. Young, who was present, to anesthetize the patient—ether being used. Thereupon I introduced a bivalve speculum, permitting the protruding portion of the hairpin to lie within the field of the speculum. First I made manual traction, but to no avail. I then seized the proximal end of the hairpin with a long, strong pair of uterine forceps and made very powerful traction. Suddenly and with that sensation which accompanies the sudden and unexpected yielding of an obstinate resisting force, the hairpin was released and came into view bent as

shown in Figure 2. Of course these procedures were accompanied by quite a profuse bleeding which, however, ceased spontaneously in a few hours. The patient was sent home, directed to remain quietly in bed, and gr. one-sixth morph. sulph. was prescribed to be taken every two hours till pain disappeared.

The difficulty of extraction is to be explained in this way: As the hairpin was movable, the free end of the shorter limb always impinged upon the tissues in the vicinity of the anterior

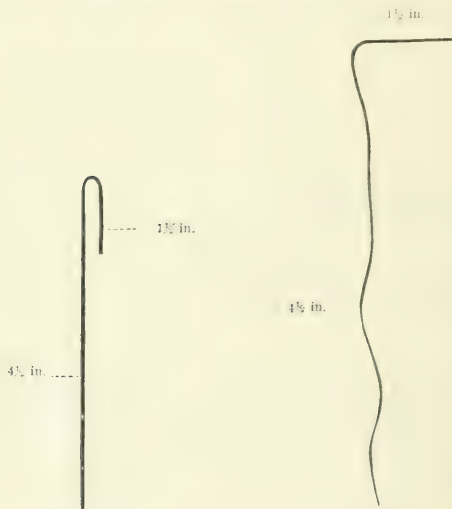


FIG. 1.

FIG. 2.

aspect of the interior of the cervix when downward traction was made. This part then acted as the resisting power, and at the same time, when more forcible traction was made by the leverage of a long-handled pair of uterine forceps, it also became the *point d'appui*, so to speak, to the shorter limb of the instrument. With this *point d'appui*, the angle of curvature of the hairpin was rendered more obtuse by the result of constant traction, thus facilitating its final extraction.

Naturally I expected that the fetus would be inevitably lost as a consequence of all this violent manipulation. The patient,

however, aside from the pain and a moderate amount of shock, rapidly made a good recovery, retaining the fetus in utero. It is now more than a month since the attempt to produce the abortion was made; I have watched the patient ever since. She still retains the fetus and promises to carry it through the normal period of gestation.

It is interesting to consider, in this instance at least, the great tolerance of violence of a pregnant uterus. It would also be interesting to know whether the child would be in any way affected in its physical or mental characteristics as an ulterior or remote manifestation of the attempted abortion.

161 WEST 57TH STREET.

A CASE OF TUBERCULAR INFECTION IN A CHILD.

BY

HELEN L. BETTS, M.D.

Jamaica Plain, Mass.

THE following case, having come directly under my observation in practice, impressed me as too marked an illustration of tubercular infection to pass unrecorded:

Early in April, 1886, I was called to see a child of 18 months, ill from eating too many bananas. He was put upon peptonized milk, and being a rosy, healthy child, he soon convalesced, when through a little inadvertence he became chilled. This in his weakened condition induced a bronchitis and a lobular pneumonia. The cough was troublesome for a few days, but as he was a vigorous little fellow he soon made a good recovery.

June 24th, I was called to attend the mother in confinement. The child was sleeping in a room near by, and was very restless and fretful, which caused the remark from the mother that he had kept her awake for some time by his tossing, and I was asked to examine the child and give him something to make him rest. Upon inquiry, a history was given that pointed toward gastro-enteric disturbance. The bowels had been constipated for some time, with occasional loose movements of indigested food and mucus. The appetite had been capricious, and he had been losing flesh for three or four weeks. The tongue was coated with a thin creamy fur. The head was quite cool, and his aunt, who was an unusually intelligent observer, said she had often felt

his head in the night when he had cried out in his sleep, and had found it of natural temperature.

The next day he was again put upon the peptonized milk, an out-door life advised, and potas. brom. prescribed to induce sleep. But there was no improvement under this treatment. The restlessness increased. The eyes were heavy, and the expression anxious and fretful. He beat his forehead and the sides of his head with his half-closed hands, and rubbed his eyes and nose continually. He had the appearance of a child exhausted for want of sleep.

Up to the evening of the 27th, there had been nothing which could not be explained by a gastro-enteric catarrh. The milk was sometimes vomited, and the stools were greenish and slimy, containing undigested food. There had been a slight exacerbation of temperature and pulse toward evening, the former not rising above 100.4° F. The respirations were somewhat quickened, but a satisfactory examination of the lungs was impossible on account of the extreme irritability and crying. However, the lower and posterior portions were examined with negative results. There was no cough. The head was cool and the pupils normal. This evening, however, the child had longer intervals of rest, during which the respiration had that peculiar characteristic which is often observed in tubercular meningitis, in which the breathing at regular intervals is deep and forcible for one, two, or three inspirations, and then gradually and softly subsides, until there is a complete cessation for several seconds, when the same phenomenon is repeated—a variation of the Cheyne-Stokes respiration. The child could be but partially roused, and the eyes had a vacant expression. For the first time there was a slight cough and the sound of mucus in the trachea, and upon auscultation of the apices of the lungs moist râles were found pronounced and abundant. Here was an anomaly: I knew the family history on both sides to be excellent, and that the care and hygienic surroundings had been such as to exclude the spontaneous development of tuberculosis. Immediately an incident which had occurred on the night of the mother's confinement flashed upon me. During the night I heard a cough of that deep, cavernous character that marks the consumptive. I exclaimed, "Who is that coughing?" "A little girl who takes care of Charlie," was the reply. I said, "She is a sick child, and it is not safe for your children to have her with them." Nothing more was said. I did not come in contact with the nurse-girl, as she was sent home soon after my warning, really ill from her cough; and it was only when symptoms of general tuberculosis developed in my patient, and I began to cast about for an explanation, that these facts suddenly grouped themselves with terrible significance, presenting a key that could not be rejected to this otherwise inexplicable case.

Upon inquiry, I learned from the nurse-girl's mother that she had already lost six older children, all dying at from six to eight

years of age with consumption, and this girl was apparently fast following them. They inherited the tendency from the father who died very suddenly at 30 years of some unknown cause. He, however, had had a very severe cough for some time, and his mother died of consumption. The nurse-girl had come to take care of the patient just as he was recovering from an attack of broncho-pneumonia, described above. She was exceedingly fond of her charge, constantly hugging him up in her arms, and kissing him upon the mouth, and holding his face against hers.

The disease now ran a short course. Acute meningitis soon developed, with great heat of the head and opisthotonos, and he died in tonic convulsions about ninety (90) days from the time at which he was exposed to the infection, and ten (10) days after the development of acute symptoms. No post-mortem could be obtained; but to my mind the symptoms of general tuberculosis were unmistakable.

This history is as suggestive as it is sad. I have long been shocked and distressed by the entire indifference with which mothers allow their children to be caressed by any and every body who is so disposed. Indeed, so far from shielding them from such indiscriminate contact, they often urge and insist upon having the baby kiss the guest or stranger who may happen to take a fancy to such an innocent and delicate attention. It would be as rational to expect the pure, fragile lily to escape unsullied from the hands of a party of children who are burying their noses in its fragrant corolla, as to think to keep untainted the delicate, sensitive tissues of the baby's larynx and lungs when indiscriminately exposed to a tide of expirations, laden always with the effete substances of the breath, and in many cases with exhalations from deranged stomachs or decayed teeth—conditions not confined to any class in society—and perhaps with the germs of infectious disease. If the baby *must* be *kissed*, offer the hand, or the foot even, but insist on protecting as far as possible the life-gate that gives admission to so delicate a structure as the lung tissue.

The importance of securing healthy nurses for children is momentous. In the case cited above, the family history of the nurse-girl was not known or thought of even. The girl had a severe cough and a terribly offensive breath, but she was neat and tidy in appearance and kind in her manner, and it is probable that her demonstrative devotion was one of the fatal factors in the case.

It is possible that the boy, being naturally robust, might have

escaped infection, had not the exposure occurred just at the time of convalescence from pulmonary inflammation. Patients recovering from bronchitis and pneumonia are cautioned by force of routine habit to protect themselves from cold. Is not impure air quite as pregnant with danger? The atmosphere of cars, crowded halls, concert-rooms, and dusty streets is full of germs which only need a suitable nidus in which to develop. The convalescent wraps himself conscientiously in shawl or overcoat while journeying through the cold or damp air, to throw it aside with a long breath of relief on reaching the warm, crowded hall, only to endanger health threefold by freely and unguardedly exposing the still sensitive air-passages to the infectious influence of air that has been breathed again and again.

Centuries ago the infectious nature of variola was demonstrated, not by the microscope or by the tedious process of germ culture. The swift destruction that followed contact left no need or desire for further proof; and now State legislation combines with individual effort to completely isolate the victim of small-pox.

More than twenty years ago, Villemin demonstrated the infectious nature of tuberculosis. Later Tappeiner succeeded in producing general tuberculosis in dogs by causing them to breathe air containing minute particles of sputa from tuberculous cavities. In 1882, Koch announced the bacillus tuberculosis as a characteristic, constant organism in tubercular affections. He proved that this peculiar organism, if isolated and introduced into animals, would produce tuberculosis—the resulting tubercles also containing the characteristic germ. It was found also that the bacillus maintained its viability after weeks of desiccation. These facts are known and widely accepted by the medical profession, and occasionally comments upon them are made in the public press; but aside from bare theorizing, the whole discovery is, for all practical results, a dead letter. The long period of incubation places inoculation and active development at such remote periods that the relationship between them of cause and effect is lost sight of, and the danger of infection—if indeed it has been thought of at all—is forgotten. The consumptive is nursed and caressed in the heart of the family. The nurse sleeps in the same room, if not in the same bed, and whoever heard of the sputa or excretions of the phthisical patient being disinfected? Usually the sputa are deposited on

napkins to be washed, on floors, streets, sidewalks, to be in time dried by the wind and borne in impalpable dust into the air we all breathe.

Fortunately the bacillus tuberculosis needs an especial environment in which to thrive. The firm resilient tissues of the healthy body do not furnish a suitable nidus, and they cast it off unharmed. Not so with membranes rendered susceptible by inflammation or mal-nutrition—conditions which furnish a favorable environment to the bacillus where it develops and works its fatal results.

The indications are plain.

When the community and the consumptive both accept these scientific facts as vital truths, then—and not till then—effective measures will be adopted both by the State and by individuals, to protect human life from this dreaded disease.

And who can impress these truths with more efficiency than the family physician?

CORRESPONDENCE.

MY WORK IN REFERENCE TO THE CESAREAN OPERATION.

A WORD OF PROTEST IN REPLY TO DR. HENRY J. GARRIGUES.

BY

M. SAENGER, M.D.,

Lecturer at the University; President of the Gynecological Society of Leipsic.

DURING the last few years, Dr. Garrigues has published, aside from his papers on gastro-elytrotomy, two articles on the Cesarean section. In the former of these, printed in this JOURNAL, April-June, 1883, and entitled "The Improved Cesarean Section," he entered most fully on the discussion of my book which had appeared early in 1882 in Leipsic, published by Wilhelm Engelmann, under the title "Der Kaiserschnitt bei Uterus-fibromen, nebst vergleichender Methodik der Sectio Caesarea und der Porro-Operation. Kritiken, Studien und Vorschlaege zur Verbesserung des Kaiserschnittes," etc. Of course, how largely Garrigues draws from this monograph can be appreciated only by

those who will compare it directly with the latter's paper. But even without doing so, it will be at once seen that Garrigues refers uncommonly often to my monograph, my name appearing no less than twenty-two times in the foot-notes. I did not take the trouble to ascertain how often he would have had to do it, if he had given the source of every particular which he first learned from my book. For nearly all the historical notes in Garrigues' paper, especially those bearing on the treatment of the uterine wound, are taken from my book and its supplement.¹

The object of this first paper was to study the behavior of the uterine wound in the Cesarean operation; this formed the basis for the correct principles governing its surgical treatment by a suture adapted to the physiological peculiarities of the uterus. I had begun this work after my attention had been directed to the subject by a case which terminated favorably under great difficulties, namely, a Cesarean section with suture of the uterus, performed on account of a retro-cervical myoma, with dead fetus, and the existence of a renal-pelvic-abdominal fistula. The main portion of my book, the history of the uterine suture, was preceded by the following motto by Cazin: "Une étude expérimentale et clinique bien faite sur toutes les sutures de la matrice, après l'incision de cet organe serait, dans l'état actuel de la science, un grand service rendu." (*Arch. de Tocol.*, I., p. 717, note.) Whether I had satisfactorily accomplished this fundamental task may be learned from the remarks of but two authors who were among the first to utilize and criticise my investigations. Mangiagalli,² one of Porro's pupils, said: "Nessuno più di Saenger corrispose meglio a mio avviso a tale desiderio (such as had been formulated by Cazin) ed al suo lavoro ed all' opera di Alfonso Corradi chiamata dallo Saenger stesso fenomenale, coat-tinsi largamente onde fare questo schizzo storico sulla isterorafia." Wilh. Fischel,³ then Assistant Professor of Obstetrics at Prague, and at that time a pronounced follower of Porro, remarked: (I translate.) "Saenger very fully discusses the history of the uterine suture. This portion, the result of the most thorough historical studies, disposes of a number of erroneous statements heretofore often brought forward, and is of the greatest actual interest on account of his mode of treating the historical material.

¹ "Zur Rehabilitirung des classischen Kaiserschnittes. Nebst einem Anhang: Nachtraege zur Geschichte der Uterusnaht beim Kaiserschnitt." *Archiv f. Gyn.*, Bd. xix., p. 370.

² "Le più recenti modificazioni del taglio cesareo, studio storico-critico," etc. Milano, 1884.

³ *Prager medicinische Wochenschrift*. April 16th, 1882, No. 17.

It is of fundamental importance for the old method of the Cesarean operation."

Soon after this, came the first Cesarean operation performed, in accordance with my propositions, by Leopold with my assistance; it was successful. A larger number of other cases presently followed, with results so "wonderful," as Harris, Lusk, and Tarnier were pleased to call them, that the Cesarean section, at one time almost abandoned in despair, became again the legitimate operation for the majority of surgeons and was placed above the Porro operation which was reserved for certain cases only. That my monograph was the instigation to these results, and that the latter were attained largely through my later writings, through my own operations, through my long-continued personal efforts in behalf of the, in my opinion, correct principles governing the improvement of the Cesarean section I may justly claim without stultification because the facts bear me out. I have impartially accorded full recognition to the labors and merits of co-workers in this field, but have determinedly rejected unqualified claims. Among those against whom I had to proceed in this manner, Garrigues was one. This fact explains the difference between his first article on the Cesarean section (April-June, 1883) and the second one, published by him in this JOURNAL for October, 1886. The latter was written for the sole purpose of attacking me personally and to depreciate my labors on the subject in question. The reason why Garrigues turned against me is, that he felt offended by some remarks contained in the last but one of my papers¹ on the Cesarean section, but in which I was perfectly justified, as I may say right here. A defence, a vindication I would have considered as quite natural; but I feel that I must energetically oppose those impassioned, rankling attacks, devoid of every foundation, such as Garrigues has hurled at me.

Let us see from what an amiable point of view G. now looks upon my book. He says (p. 1,009): "Saenger has not even proposed anything new that in the hands of others has proved valuable. . . . (His book) is a meritorious work in so far as the author protested against the indiscriminate use of Porro's operation, etc., but as to originality, its two hundred pages contain only one new idea, and that one has been found in practice to be an unnecessary complication of the operation, and has therefore again been given up. . . . Thus nothing has been left of Saenger's only original idea"—the sub-peritoneal resection of the

¹ "Neue Beitræge zur Kaiserschnittfrage," Archiv f. Gyn., Bd. xxvi., p. 168.

muscularis of the uterus and infolding of the peritoneum—"and still the operation shall bear his name?"

Since I myself, from the very outset, have designated this "one new idea" as a non-essential point, nothing, absolutely nothing remains as the outcome of all my labors, according to Garrigues. And yet he knows very well, as do others who again and again pretend that the peculiarity of my method consists in nothing but this sub-peritoneal resection, that I only recommended it as the means for the better execution of the symperitoneal suture. Thus Garrigues says regarding it (of course, in his first, amicable paper): "Saenger admits himself that the excision of muscular tissue is superfluous if the uterus is flaccid, or if in a contracted uterus the cut surfaces are parallel, and the two portions of the serous membrane can be drawn together and applied one against the other without dissection. But under the opposite conditions, it is doubtless a valuable suggestion, and the recommendation of the operators who have tried it in practice speaks in favor of it" (p. 521).

This may serve as an example how Garrigues judged of the same thing before and after his sensibility had been excited.

As in all similar cases, the remarks made by me against Garrigues which so greatly provoked his wrath, when taken out of their proper connection, sound quite different from the way they were intended. I hope therefore that both the editor and the reader will understand why I insist that for my justification the passage be printed *in extenso*, so as to enable them to form their own opinion. It reads:

"In North America, gastro-elytrotomy, which made its appearance as 'Thomas' operation' about the same time as the Porro operation, absorbed almost equal interest with the latter; but mainly owing to the excellent critico-statistical labors of R. P. Harris, the conservative Cesarean section was never dropped from the scientific order of business. Some of the most important innovations in the technique of the uterine suture, as I have shown, emanated from that country--the employment of silver wire for the sutures, and the insertion of more numerous sutures. Another author, whose pen had hitherto been devoted more to the establishment of gastro-elytrotomy, Garrigues, now enters into the current of these good traditions. His arguments against the general employment of the Porro operation fully harmonize with my own, and he likewise demands a more frequent use of the improved Cesarean section: 'Since the Cesarean section is conservative in principle, and may be improved in many

ways, as proposed by different writers and operators, it is certainly not only justifiable, but wise to try how it will work in its new shape.' In one case, where Garrigues was afraid to perform gastro-elytrotomy because the parturient was too sick and weak to stand the wound suppuration connected with that operation, he did the Cesarean section and employed a mode of suturing *which bears a close resemblance to the one devised by me (without resection)*. The uterine wound was closed with twenty-four silk sutures, one-half of which passed through the entire thickness of the uterine wall, while the other half united only the peritoneum. The woman died after fifty hours. The real cause of death was sepsis. At the autopsy, the uterine tissue was found normal. 'The sutures were still as they had been inserted, only closer together. The peritoneum and the external two-thirds of the muscularis were united by first intention, the inner third adjoining the decidua had not united. The peritoneum along the line of incision was to a great extent covered with a fine layer of new-formed tissue' (?). Garrigues' assertion, that he had arrived at his method of suturing independent of the later publications on the Cesarean section, I am inclined to doubt. In his last paper on gastro-elytrotomy, published in January, 1883, not a word is said about the considerations which, as he claims, led him to that procedure. In that place he deals almost exclusively with gastro-elytrotomy and the Porro operation. I must also point out that my book was concluded in December, 1881, and appeared early in 1882, while Garrigues did not perform his operation until September 9th, 1882. *He also has drawn pretty freely but loyally from the former*, but did not need to take the trouble of making historical researches for himself, since he found even the full and valuable American literature on the Cesarean section digested by me. In his synoptical description of the *modus operandi* he has included all the main points of my programme, even the subperitoneal resection, but without citing any authorities, so that nothing but my protest would prevent our American colleagues from designating the method as that of Garrigues. *But at all events, we can calculate with the greatest probability on American support in the rehabilitation of the Cesarean section, because even heretofore the operation did not bear such a bad reputation there, owing to better results, and the right course will probably now be taken, and for this reason favorable results will assuredly not fail.*"

In his polemical article, Garrigues always speaks only of the insult he has received, but he is silent about the praise bestowed

upon him and his American colleagues. Every unbiassed reader will see and admit that I have upbraided Garrigues for only one thing, namely, that in the conclusion of his first article, in the summary of the description of the *modus operandi*, he had incorporated all the main points of my programme, even the sub-peritoneal resection, without giving the source, represented more particularly by my book on the Cesarean section, up to that time the only modern comprehensive paper on that subject. I was, and am still, fully justified in protesting against this. But what I said with reference to Garrigues' case of Cesarean section is not a personal remark; for I did *not* say "independent of *my* publications," but "independent of the *later* publications on the Cesarean section," among which I included, aside from the cases of Spencer Wells, cited of course also by myself, the several American authors, especially Byford, Lungren, and others, which could hardly have remained unknown to Garrigues, since he must have seen at least the collections by Harris. *Of myself I did not speak at all in this connection.*

It is particularly because I myself, in all my scientific papers, have always striven for the greatest accuracy and conscientiousness in the citation of the sources, the labors and publications of other authors, that I demand a like action on the part of others towards myself. I have merely reminded Garrigues of this duty by writing in protest as I did.

I therefore beg again to call attention to the salient point of Garrigues' polemic against me. He makes it appear as if I had asserted he had in his *operation* copied the method of suturing the uterus devised by me. I emphatically protest against this substitution. My personal recrimination, my blame of Garrigues, has only reference to the fact that, at the conclusion of his first article on the Cesarean section (1883), he had reproduced the essential particulars of the method of performing the operation laid down in my book and subsequently, without specifying it.

Hence there is no cause for him to play the part of one sorely offended, and to say that I had charged him with being "a man who by lying tries to steal some great discovery made by another." I am quite willing to believe that he arrived at his method of operating independently, especially as he was aware of Spencer Wells' experience. But when he says: "It was so natural a thing to put in the sutures just as I did, that it never occurred to me that I had done anything remarkable, and do not think so yet," he nullifies his merit again by this observation which is

perhaps merely intended to show his modesty, in that he manifests thereby that he completely misunderstood the importance of the matter. Very well, Garrigues has operated as he has described, independent of my book, which then had long appeared, independent of the first operation by Leopold which preceded it by some months. I do not doubt it and have not done so. But thereby he had done nothing else but performed a Cesarean operation as others have done; only that he, as I appreciatively pointed out, acted in a rational manner in the suture of the uterus on the principles developed by me and based on scientific grounds.

But *at the time of his operation* he did not draw any general conclusions from the technique he had employed for a typical method, any more than Lungren did, whose two cases I cited in my book with all their details and in full appreciation of their importance. Garrigues enriched the record of the rational uterine suture by an interesting case, but he did not create a method. I, however, founded one which clearly laid down all the particulars of the operative technique, *and this method existed, had undergone its practical test, even before Garrigues had operated.* This is an absolute fact. As Garrigues himself confesses, he hardly knew any other author than Spencer Wells, the importance of whose statement respecting the necessity for the symperitoneal suture of uterine wounds, though it was not made with any reference to Cesarean section, was probably emphasized by no one so much as by myself. Garrigues did not know the extensive history of the uterine suture, nor the cause of its failures, nor the conditions governing the healing of the uterine wound, etc. That he learned all these things subsequently is proved by page after page of his first article, May to June, 1883. That he did not enter on the study of the questions respecting the improvement of the Cesarean section until after his operation Garrigues admits himself. In 1883, he did not disdain to cull plentifully from my book, the preparation of which required a most laborious scientific study, theretofore undertaken by no one in the same manner, in order to find later that it contained nothing original in two hundred pages. *Sapienti sat!*

It has always appeared very remarkable to me that, in his paper published in January, 1883, on gastro-elytrotomy, Garrigues was absolutely silent regarding improvements of the Cesarean section. We read there on page 44: "Thus, if working in the country, and being called to a case in which Cesarean section or one of its substitutes were required, keeping in mind the many

cases of successful Cesarean operations in country practice, I would not hesitate to perform this operation, as has been done without assistance, and even without a bistoury, simply using a common razor. In a hospital, I would, everything otherwise equal, prefer gastro-elytrotomy, etc. . . . If it were necessary to operate before the dilatation of the cervix had begun, I would perform Mueller's operation, which has given better results than Porro's." And page 50, paragraph 9: "In country practice, the old-fashioned Cesarean operation will in most cases be preferable to all its substitutes."

Thus Garrigues here declares unconditionally for gastro-elytrotomy or the Porro-Mueller operation in hospital practice, and for the "old-fashioned Cesarean section" in country practice, "by simply using a common razor." This was Garrigues' standpoint before he became aware that the "old-fashioned Cesarean operation" had become rejuvenated. And when, the reader will inquire, was this article printed? *Exactly three months previous to the appearance of Garrigues' second article on Cesarean section* which all at once heralded the improved operation. Not a word, not a single word about improvement and possibility of improvement of the "old-fashioned Cesarean operation." Not a syllable, not an intimation by Garrigues that he had reflected on its defects and devised some kind of remedy. No notice, no indication that he himself had performed an antiseptic Cesarean section with a rational uterine suture. And only three months later, what a transformation! The connecting link between these two successive, so radically different articles by Garrigues can be recognized psychologically only in the fact that in the mean time he became aware of the strong movement in favor of improving the classical Cesarean section and against the Porro operation, against gastro-elytrotomy, during which he also became familiar with my labors in this field and utilized them. In this way I have come back again to the point from which I started.

Garrigues sets himself up, moreover, as the defender of others, of Porak, Leopold, and Kehrer, and of course takes sides against me without any objective investigation of the state of affairs. There is no need for me here to enter again on my discussion with Porak, in which I was not the party who had the worst of the argument—a fact which every one may ascertain who will take the trouble to consult my reply to Porak in the *Arch. f. Gyn.*, XXVII., p. 170. The same paper will also show that my complaint of the reviewer in the *Amer. Journ. of the Med. Sci.* was directed less against the latter than against Porak, whose

"review" was so worded as to be mistaken for an original article by the reviewer. I have again occasion to call attention to this mode of reviewing in which the real author is entirely ignored: In *The International Journal of the Med. Sciences*, July, 1886, reference is made to Schauta's first Cesarean operation which even to its minutest details was performed according to the method described by me, without my name being mentioned by the reviewer who might have learned that much from Schauta's paper.

As to Leopold, he was the first—and for this I have always shown him grateful recognition—who employed my procedure on the living subject, but it was done after reading my book, after repeated conversation with me, during which the mode of operation was accurately determined, and with my personal assistance. Regarding Leopold's "modification" at that time, I have shown long ago (*Arch. f. Gyn.*, XX., p. 304, note) that it was merely an unimportant variation of the procedure. Garrigues, of course, takes no notice of this. Since he was not able to enumerate essential alterations by Leopold, he clings to the incidentals, such as resting the uterus on gutta-percha tissue, sprinkling iodoform into the body of the uterus—measures which, to say the least, are common to us, having been included beforehand in the plan of operation discussed between us. Besides, Leopold himself has formally acknowledged that it was my method which he followed in his operations (*Arch. f. Gyn.*, XXVIII., p. 97). So Garrigues wants to be even more Catholic than the pope! Is it consistent when he who disputes the originality of my method puts such great weight upon variations of it, made by others? But whatever details of the procedure have been modified hitherto by Leopold and others—and I dispute no one's right to this and even find it advantageous to do so—no single alteration has touched the fundamental principle of the matter, namely, how a primary union of the uterine wound by an appropriate exact suture can be certainly attained in any other manner than in the way I have done.

For instance, if B. Schultze did not make a sero-serous button suture, but a rosette suture, is it not for all that a symperitoneal fold suture? If Krukenberg, instead of the two-rowed button suture, employed one resembling the Gussenbauer-Woelfler intestinal suture, the same effect can be obtained with it, and I have also considered and figured it in my book. If Leopold has in his last cases inserted a running sero-serous suture of chrome catgut, it still remains the same sero-serous fold suture. In fine, any desired mode of suturing can be employed, as well as the most vari-

able material—silver, silk, silk-wormgut, catgut—provided the uterine wound is closed quite accurately, and the peritoneal wound margins are flatly brought together. For in my book it will be seen that I have subjected eight different modes of suturing to a test, and additional ones subsequently, in order to find by practical experience that the interrupted suture, with the deep stitches of silver, the superficial ones of silk, is preferable. Some latitude is left to personal choice, provided the purpose inherent in the method is left unaltered. Since Leopold has had the greatest number of personal cases, his alterations and changes of certain details of the mode of operation are of great importance for comparison, and have contributed largely towards determining and simplifying the technique; but the main point, *i. e.*, the exact closure by suture of the uterine wound according to the principles laid down by me, remains unaltered; this is proved by the fact that the course was equally favorable. Another great merit of Leopold's which I am pleased to acknowledge is, that by the unsurpassed results of his numerous operations he has helped to spread my method and has gained for it increasing confidence.

I am not surprised that Garrigues, in order to prove that there is nothing original in my method, has also pointed to Kehrer. But since the fact cannot be altered that my book appeared three months before Kehrer's paper, from which I naturally first learned of his two operations, and this disposes of the question of priority in my favor, Kehrer himself could not help submitting to the inevitable, and only allows it to appear in a foot-note of his last article (*Arch. f. Gyn.*, XXVII., p. 257) that I had perhaps got the idea of a double suture of the uterus from one of his students—an insinuation which requires no answer from me. To Boudon,¹ who goes so far as to assert that Kehrer's paper had induced me to occupy myself with the improvement of the Cesarean operation, I am willing to pardon this error. Would not Garrigues have been delighted to have known this author?

It is especially Kehrer's proposals, though theoretically similar, yet materially differing from my own, which prove that in the Cesarean section much depends on the most accurate adaptation to the existing conditions, even to the minor details. Kehrer's mode of suturing is calculated for the opening of the uterus by a deep transverse incision. But since this mode of incision has no prospect of being generally accepted, and Kehrer's method of suturing is not adapted to the anterior median incision which I

¹ "Étude critique sur l'opération césarienne et l'opération de Porro." Paris, Delahaye et Lecrosnier, 1885, p. 24.

have demonstrated to be the most suitable, the difference between us is thus at once briefly indicated. Kehrer's method, therefore, has not been imitated nor extended.

Why must I defend myself at all? Why must I write such an article? By degrees only I have become irritated and embittered when I saw that some brought forward, as new, things which had long appeared in my writings, and others praised immaterial modifications as great innovations; that some used my articles without naming the source, and others made believe that the acquisitions gained had been common property, as if that which has now become clear had always been self-evident. The egg of Columbus! Now every one can stand it on end.

To be sure, Dr. Garrigues, I identify myself with the improvements of the conservative Cesarean section because I have the right of saying of myself that not only have I initiated the movement for its rehabilitation, but have more than others advanced it by appropriate propositions, by experiments, by personal operations during five years of indefatigable labors with a definite object. Indeed, this is vigorous self-praise, but it is based on truth and facts. If I must defend myself in person against the attacks of Garrigues, I could not avoid praising myself.

Although to-day most obstetricians in all countries, Italy not excepted, again look upon the conservative Cesarean section as the legitimate operation, as late as 1881 the Porro operation was the only one from which any good was hoped for. This revulsion in favor of the natural method of delivery with preservation of the uterus—incised merely for the removal of the child and again closed by suture—could be brought about neither by denunciation of the mutilating Porro operation nor by high-sounding expressions of the hope that in time it would be possible to re-establish the conservative Cesarean section, but only by the active improvement of the technique of the latter and by putting in force the correct principles as the basis on which the main portion of the operation rested, beside observation of antisepsis; that is, a rational treatment of the uterine wound. That I have accomplished this task is proved by the successful results attained since then. My book appeared just at a time when the possibility of improving the conservative Casarean section was despaired of. The indissoluble uterine suture, on which the successful issue of the operation was mainly dependent, was thought to be impossible. This fact induced some authors (Frank, Cohnstein) to make some strange proposals with a view to avoid the suture. The greater number accepted the Porro operation unconditionally, and when

the possibility of healing the uterine wound by first intention by means of a rational suture was shown both theoretically and practically, they would not believe it at first. Even to-day there are some doubters to whom the proofs thus far are insufficient. Therefore we must still labor for the good cause in which Garrigues aids unwittingly by his attack. Another question which has again come into the foreground since the rehabilitation of the Cesarean section and has been followed by me as far as its consequences is entirely passed over by Garrigues, viz., *the displacement of craniotomy of the living child and in part also of artificial premature labor by the Cesarean section*. The discussion of this question is beyond the scope of the present article, but I was greatly surprised that Garrigues prefers craniotomy of the living child to the Cesarean section, for *socialistic* reasons. He thus advocates a view which has hitherto been foreign to practical obstetrics as an indication. I may be pardoned for this digression.

The fact can hardly be emphasized sufficiently that isolated operations do not found a method unless the considerations which guided the surgeon in the several steps of the operation have a scientific motivation, unless inductive conclusions are drawn from the single case for general application. *This is the difference between clinical cases and method*, and it explains how I could evolve a method from the clinical cases before having operated myself and how others who operated in a similar manner so as to approach the principles of this method still failed to establish one.

"When the time is ripe for a certain idea," says Garrigues, "it is quite natural that it should occur about simultaneously to different men." He is certainly right in that. But to whom does it apply in the present instance? At most to Kehrer, who, like myself, devised a method extending beyond the reported cases. The men who, among the number for planless and ill-advised Cesarean operations, stood forth prominent as surgeons who approached the true method of operating, from d'Avanzo to Spencer Wells and Langren, have had their importance justly appreciated by no one more fully than by myself. But not one of them remedied the defect of a scientific foundation for the operative technique of the Cesarean section, not one of them produced a firmly established method and secured for it universal recognition. They merely furnished valuable cases to be utilized as the foundation for the superstructure.

But if, as Garrigues maintains, my method of performing the Cesarean operation was really hovering in the air, why, I may ask, has no one grasped it, especially in the fatherland of Lister

and Spencer Wells? For in no country have matters remained unchanged, even to the most recent times, as in England. On the one side we see the classical Cesarean section performed in the old primitive way with corresponding unfortunate results; on the other, we see the unconditional advocacy of Porro. No wonder that Lawson Tait, having in view the English conditions and ignorant of others in other countries, particularly Germany, purposely exaggerates the mortality to 99 $\frac{2}{3}$ per cent. Only now a change is preparing which finds its best expression probably in a single sentence from a card recently directed to me by Clement Godson, the well-known advocate of Porro: "I am getting to be converted, as you prognosticated I would—I have had an unsuccessful Porro." How diametrically opposed is this confession to another expression by T. M. Dolan a little more than a year ago! The latter compares (*Brit. Med. Journal*, Dec. 26th, 1885) 134 Porro operations with 59 recoveries to 136 Cesarean sections (of course, "old-fashioned") with only 25 recoveries, and adds: "In the face of these striking figures, we think that the obstetrician who does not discard the old classic operation for the modern method inaugurated by the great Italian professor, takes upon himself a great responsibility!" What would Dolan say now were he to learn the results obtained with my method?

Now is the time to demolish completely Garrigues' fiction that Spencer Wells had been his great prototype. For in his book, "Diagnosis and Surgical Treatment of Abdominal Tumors," Spencer Wells does not declare himself an adherent to the conservative Cesarean section, but an advocate of Porro. At the same time he believed the Cesarean section to be so unpromising that he says the anti-vivisection bill must first become inoperative before it would be possible to lay the foundation for improving the Cesarean section by experiments on animals (!): "Whether the necessary experimental trials of both methods are, in this country, to be made on women only, or upon females of some of the lower animals, must depend upon the degree in which British physiologists (!) are hampered by the vivisection act." So spoke Spencer Wells, the only prop to which Garrigues despairingly clings, at a time when my method was already completely published and could point to the best results. Until the most recent times, the movement in favor of the improved Cesarean section, inaugurated by my own, Kehrer's, Leopold's, and other writings, was next to unknown in England. The *Edinburgh Med. Jour.* alone repeatedly called attention to it (Simpson, Angus Macdonald). The reader is referred to the paper by Robert Barnes, "The Alterna-

tives to Craniotomy " (introduction to a discussion in the Section of Obstetric Medicine at the annual meeting of the *Brit. Med. Jour.*, October 2d, 1886). Barnes did not say one word about improvements in the technique of the Cesarean section which were then established and tried for years. Indeed, by Cesarean section he understands hardly anything else than the Porro operation which he weighs as an alternative as opposed to craniotomy. However, aside from the point of view which is likewise in favor of the conservative Cesarean section, it is no longer possible to consider that craniotomy of the living child can be replaced by the Porro operation. This, as I believe I have conclusively proved (*Arch. f. Gyn.*, XXVI., p. 222), can only be done by the conservative Cesarean section. Kinkead, in the paper following that of R. Barnes, and entitled "Craniotomy and Cesarean Section," betrays at least some knowledge of the reforms in the field of the Cesarean operation. He was acquainted with Leopold's first operation, but quotes it and my method quite incorrectly.

In the discussion to that famous paper by Lawson Tait, in which he gives the mortality of the Cesarean section as exactly 99.971 per cent, and proposes to reduce the mortality of the Porro operation to five per cent, Routh expressed himself as follows: "There were three conditions which, if carried out, would make this operation (the Cesarean section) successful; first, anti-septic measures rigidly carried out; secondly, no preliminary tampering with the patient by forceps or other measures, all of which produced delay and exhaustion; thirdly, the uterus should be opened high up, with as small an opening as practicable, care being taken not to cut through any part of the cervix. If this was done, ligatures, as in Dr. Edmunds' case, would be found unnecessary."

Dr. Routh, therefore, believes even ligatures to be superfluous, and says not a word of suturing the uterus! And this in spite of the fact that "the time was ripe."

Dr. Lusk, of New York, first called the attention of British surgeons—and for this I am very grateful to him—to my method and the results obtained with it: "Cesarean section always held out promise when performed under favorable circumstances. The weak side was always the gaping of the uterine wound. Porro's great method consisted in doing away with this danger by the removal of the organs. But a still greater work was the re-awakening of the professional interest in the Cesarean operation. The result was the wonderful success of Leopold and other Germans with the uterine suture of Saenger. This method, accord-

ing to the latest reports, showed in twenty-six cases nineteen recoveries and seven deaths. In all the latter, the operation was performed under circumstances well-nigh hopeless. Cesarean section, modified by Saenger, Porro's operation, and that of Dr. Thomas, were not rival, but supplementary operations, etc." The further discussion betrayed very plainly that Lusk's statements were as good as unknown.

But it gives me great pleasure and satisfaction to state that a short time after this, at a meeting of the British Gynecological Society, October 13th, 1886, in a paper entitled "Ought Craniotomy to be Abolished?" Meadows occupies the same standpoint as I do, mainly on the strength of the results of the operations performed according to my method, as communicated to him by R. P. Harris. Altogether, I can hardly be grateful enough to Dr. Harris for the lively and warm interest manifested by him in my labors for the Cesarean section which were largely stimulated and supported by his own; and no less grateful for the zeal and disinterestedness displayed by him in spreading in English-speaking medical circles the results obtained with the improved Cesarean section.

Garrigues likes to cite authors who devised improvements in the technique of the Cesarean section before I did. Among these he includes Guéniot. His proposal to draw the intact uterus into the abdominal wound by a loop of silver wire, to incise it "*hors du ventre*" and after being emptied to take it entirely out of the abdominal cavity, has been discussed and criticised in my book (p. 130). But evisceration of the empty uterus has been done already by Ritgen. And Guéniot himself? He did not in the least harbor the illusion that his proposal had materially advanced the technique of the Cesarean section. In order to prove this, I may be permitted to cite some remarks made by Guéniot in a report¹ to the Académie de Médecine of Paris on three successful Cesarian sections performed by Dr. Closmadeuc (of Vannes) in the old-fashioned way. This report appeared in 1885, that is, fifteen years after he made his proposal, before Porak and Potocki had called the attention of French physicians to the new era of the improved Cesarean section. Guéniot expresses his surprise that the great advances, especially in abdominal surgery—anesthesia, antiseptics, hemostasis—had been

¹ "Rapport sur un travail de M. le Docteur de Closmadeuc de Vannes, intitulé opérations césariennes, au nom d'une commission composée de M. Tarnier et Guéniot, rapporteur." Bull. de l'Acad. de Méd., etc., 2ème série, tome xiv., 16, vi., 1885.

productive of so few improvements in the Cesarean section. Assuming the main causes of failure of hysterotomy to be hemorrhage and peritonitis, he adds: "Supprimer ces deux complications, ou plus exactement, les réduire à une extrême rareté equivoudrait donc à un immense progrès, c'est-à-dire à la transformation, des résultats présents et passés de l'opération césarienne. Un tel perfectionnement est-il chose possible?"

This possibility appeared so improbable to Guéniot that he must have been surprised to learn shortly afterwards that it was really in existence, and that the endeavors to paralyze these dangers of the Cesarean section had been in the main successful.

In this modest fashion spoke Guéniot himself, who was set up by Garrigues as one of my most important forerunners in order to bolster up an inferior detail in the *ensemble* of the Cesarean operation. Such a procedure is quite characteristic of Garrigues' polemic against me. Those who are not familiar with the literature of the Cesarean section may be misled by him, but not I, who have studied it most thoroughly before I even thought of occupying myself with it, knowing, as I do, whence he has taken his captious wisdom.

Nil novi sub sole! If any inventor produces anything new nowadays, it will hardly have arisen by "spontaneous generation," but will always show some elements of the activity of others. And then it does not take long before everything is dug out that has previously existed and which often has but little to do with the invention. The "*dii minorum gentium*" also demand their part, and the envious, who carelessly passed by the find secured by somebody else, do not rest until they have discovered that this came from this and that from that, even if it finally has become something altogether different. Thus it is also with advances in medicine which, of course, have all the previous science behind them, but still where the slightest alteration may be productive of the greatest revolutions. It is not necessary for me to make excursions into the history of medicine in order to prove this.

If Garrigues disputes my claim of having devised a new improved method for the Cesarean section, he should, in order to be consistent, do the same with Porro and Thomas, because they were by no means the first to perform the operations called by their names. It is generally known that Horatio Storer amputated the uterus evacuated by the Cesarean section before Porro had done so, not to speak of the authors who had considered this operation theoretically, before Porro operated on Giulia Cavallini

and published his famous treatise. As regards gastro-clytrotomy, it may be read in every text-book on obstetrics that it was first conceived by Joerg and executed by Ritgen—a fact which does not by any means lessen Thomas' merit for having reawakened it and brought its development up to the times. Still less can Porro's fame be clouded by Storer's actual priority, for the reason among others that he did not learn of it until afterwards. Porro¹ himself points out incontrovertibly the great difference existing between the unpremeditated operation by Storer, performed under the stress of circumstances and with insufficient means, and his own projected operation, previously determined in all its details, and carried out on the living subject in accordance with the programme.

A new operation, if it is not performed according to a pre-determined method based on a sound foundation, but is rather the result of an accidental chain of circumstances, remains an isolated fact which does not interest a wider circle unless this single case becomes the basis of a new method. This shows that in the operative field two ways are equally feasible and equally justified: first the operation and from it the method; or, first the method and from it the operation. It can be shown precisely on the example of Ephraim McDowell chosen by Garrigues how erroneous it is to conclude anything further from the historical fact that this surgeon performed the first ovariectomy than that circumstance alone; to Spencer Wells only are we indebted for the method of ovariectomy and its successful propaganda. None but a method complete in itself has a lasting value and a permanent influence on matters relating to operations.

In the light of these general explanations, what is Saenger's method of performing the Cesarean section? Briefly defined: "Laparo-hysterotomy, performed with all the auxiliaries of modern obstetrics and surgery against the former chief dangers of hemorrhage and infection, with closure of the uterine incision by a mode of suturing adapted to the physiological peculiarities of the organ and firmly established on scientific principles, which com-

¹ As it may be interesting to many to see the passage in question, I copy it in the original language: "Il non aver pensato e preveduto l'amputazione uterina, fece sì che il dott. Stover (instead of Storer) dovesse procedere poi con mezzi e con metodi, disadatti all'operazione, consigliata gli dalla gravanza ed urgenza del caso. Qui abbiamo due vittime che certo non avrebbero incoraggiato alcuno a ripetere il tentativo dell dott. St. e ci troviamo di contro a un caso particolarissimo che non poteva di certo far nascere il concetto della metodica amputazione dell' utero nel taglio cesareo" (pp. 76, 77).

pletely compensates the injury to the uterus and guarantees healing by first intention; all the methodical and positive improvements in the technique, proposed for the purpose of again restoring to the first place the almost abandoned conservative Cesarean section and to limit it from the Porro operation by the establishment of definite indications."

Before me, no one has formulated such a programme and, what might be the main thing, brought it to its realization in every direction. It is easy for me to furnish the most positive proof of this. It rests on the direct recognition of the profession who did me the honor to call the new method of the Cesarean operation—which alone among others, devised at the same time or subsequently, put a stop to the universally victorious Porro operation—after my name, so that to-day every one versed in modern obstetrics knows what is meant by it. When one man like R. P. Harris, so eminent an authority in all matters relating to the Cesarean section, has recognized my method as original, it should really be indifferent to me that Garrigues does not do so, since his denial is based not on objective, but on personal reasons—a grave but just charge as regards the objectivity of an author! The case record of Cesarean sections performed according to my method—now forty-five—is at the same time a list of those who think like Harris; but even among those who have had no opportunity as yet to operate I number adherents, such as Lusk, Tarnier, Meadows, and others, not to speak of German authors; and I think no one will allow Garrigues to lead him astray, but rather will wonder that I deem him worthy of such a thorough refutation, since he has taken his weapons from my writings. But "*qui tacet consentire videtur*," and for this reason I do not keep still.

I myself regret most deeply that my book on Cesarean section is so little known, especially among English-speaking physicians. But I may boldly assert that since its appearance in the literature of the Cesarean section no special theme can be broached that has not been thoroughly discussed in it on a historical and modern basis. But to-day I can no longer permit that, when my method is spoken of, this book alone be made the basis, as Garrigues does. I must demand that all my writings on the Cesarean section published by me in the last five years, all of which aim at a progressively greater security and simplicity of the procedure, and ending with my paper read at the first congress of German gynecologists in Munich, be included. When I wrote my book, I myself had performed only one conservative Cesarean section

which, not having been made according to a definite method, was not even incorporated in my lists—probably the best proof of the strictness with which I acted, since I might have counted this successful case as the first of all the following, it having been performed antiseptically and with an accurate uterine suture. According to my method as subsequently formulated, I myself have performed to the present time, at Credé's clinic, four operations and have assisted at one, while the whole number of cases operated on thus far at the Leipzig institution is seven, in which all the mothers recovered and seven living children were secured. Garrigues takes pleasure in referring to me as a theorist—here is the practice! To be sure, I have altered the method originally proposed in many ways, partly in consequence of the experience of others, especially that of Leopold. But is there a single operation in surgery the performance of which is immovably fixed forever? It is precisely in the alteration of the details that progress lies. If but the fundamental principles of the operation remain, that is the main thing.

Garrigues attempts to prove that not a single step of the Cesarean operation called by my name was originated by myself and peculiar to me alone. Herein he shows a sophistry which is hard to match; for he makes it appear as if I had unconcernedly appropriated all the labors of those who had contributed something towards the improvement of the Cesarean section; while the fact is, that all these authors, with whom Garrigues was made acquainted only through my book, could not have obtained more suitable recognition than they received by me. And not one of those praised by Garrigues as my predecessors has arisen to complain of me. How could they? They all have merely contributed details, some of them very valuable; yet no one but myself has united all these into one total of a new method, with the addition of the most important innovations. “*Ubi sunt qui ante nos in mundo fuere?*” If Garrigues' example were to be followed, then no operator could henceforth boast of having devised a new method. He demands that everything belonging to the operation should be a personal invention, even the chloroform and the antiseptics. Do not musicians always work with the same chords, authors with the same stock of words which are common property?

Garrigues divides the Cesarean operation as now performed into eight groups of manipulations, and attempts to prove that I had no share in originating any of them. These eight steps are:

1. Antisepsis (Lister).
2. Early operation (R. P. Harris).
3. Eventration of the uterus (Guéniot, P. Mueller).
4. Temporary closure of the abdominal wound, etc., behind the eventrated uterus (Frank).
5. Resting the uterus on gutta-percha tissue (Leopold).
6. Temporary compression or rubber ligature of the lower uterine segment (Rein, P. Mueller, and others).
7. Keeping the uterus warm by cloths (Leopold).
8. Uterine suture (numerous operators).

Strange to say, no mention is made of the point which really governs the whole and formerly actually constituted the operation itself, viz., *the uterine incision*. Did Garrigues forget this point? I am immodest enough to assert that I have decided this question as to the most appropriate incision in favor of the anterior median incision. Perhaps this is now taken as self-evident, though formerly this was by no means the case, as may be seen in my book (pp. 183-186).

The importance attaching to the proper direction of the uterine incision I have explained above in connection with Kehler's method, which is based on the deep transverse incision. The plasticity of the uterus is extraordinary, its tendency to heal much greater than had been formerly believed; I am sure the uterine wound could be made in any direction and still heal up if rightly sutured. But it is equally certain that the anterior median incision is the best and most appropriate for delivery, if but on account of being parallel to the majority of the fibres and away from the large vessels of the uterus.

In considering the eight steps of Garrigues, I can at once cross off numbers five and seven, neither of which was devised by Leopold, but by me.

Self-evident though it is that I as well as surgery in general have extensively utilized the blessings of *antisepsis* (No. 1), still I must say—thus inclining somewhat towards Lawson Tait—that it is not absolutely essential, at least as chemical antisepsis, to the success of a Cesarean section, or could be secured by the simplest measures of cleanliness in the absence of septic germs. Otherwise not a single woman could have recovered in former times. For even the uterine suture is not absolutely necessary; still it is certainly more important than antisepsis. *The highest degree of technical perfection, the greatest security to life in the Cesarean section, however, is only guaranteed by the co-operation of antisepsis with a rational uterine suture, as I have strongly*

emphasized in my book and in all my writings. If in addition thereto the principle be followed of performing the operation as early as possible and abstaining from unpromising attempts at delivery—a fact always recognized as important, but the full weight of which has only been pointed out by R. P. Harris (comp. my monograph, p. 157)—we have secured the three most important principles of the improved Cesarean section, in comparison with which points 3, 4, and 5 are quite inferior, but which in my labors have been left sufficient latitude, in the manifold extension of the technique of their authors, none of whom has devised a true method for the Cesarean section.

If from the whole operation one step should be selected to be placed at the head of the modern improvements, it is unquestionably the *uterine suture*. I may presuppose that the principle on which the uterine suture devised by me is based is well known. Briefly defined, it consists in the exact closure of the entire uterine wound by a two-rowed suture, the lower tier of which is to comprise the whole uterine wall without passing free through the cavity of the organ; while the superficial tier, placed between the deeper stitches, merely unites the surfaces of the serous edges. Both tiers of sutures to be so close and so numerous as to insure an absolutely perfect reunion of the uterine wound and its covering with peritoneum. The suture material to consist of a substance the knots of which do not loosen and which will not dissolve (silver, silk, or chrome catgut). Since the uterus does not present a movable subserous layer of tissue, the undermining of the peritoneum and resection of the muscularis are intended for cases in which the parallel union of the wound and the symperitoneal plane suture could be effected only with difficulty. (This measure proved to be not essential, but was of great value, as it was best suited to bringing the symperitoneal plane suture into recognition). The ultimate object of the uterine suture was stated to be: *the uterus after the suture must be like an uninjured organ, the uterine wound must heal by first intention without adhering to the abdominal wall*. It is self-evident that this my procedure did not arise as Minerva did from the head of Jupiter, but has predecessors, all of whom I enumerated conscientiously; it is natural, too, that it admits of numerous combinations; but there is hardly any combination which I have not mentioned and tried—some of them, such as the continuous suture and Gussenbauer's suture have meantime been preferred by several operators without having to be considered as a material deviation from the fundamental

plan, if only the closure of the uterine wound is complete in the sense above given, and the peritoneal surfaces are brought into close contact. The effrontery of declaring my improvements and amplifications of the uterine suture to have no existence could be ventured by Garrigues only with a reading public who were unacquainted with my book and my numerous succeeding writings in the original language. This excludes, of course, those who know and have read my articles, who will admit that I treated the difficult subject of the uterine suture, which now appears so simple, not in vague generalities, not in a few lines and aphorisms dashed off, but in the most comprehensive manner possible—historically, experimentally, comparative-anatomically, histologically, clinically, etc.—which nobody had done before me, until I finally arrived at that perfect method which to-day proves its correctness in the most brilliant results.

With diplomatic cleverness Garrigues seeks to prove that my method of suturing is nothing but that of Lungren, Baker, and Spencer Wells. The reader please refer to p. 138 of my book. He will find there, to his greatest surprise, that the three authors named are cited there in the same order and almost in the same words, with extracts from their writings. Thus it may be seen that he takes his proofs against me from my book. But how does he utilize it? Let us first examine Baker's mode of suturing. Though he avoided the decidua and took care to unite the peritoneum, *his entire suture consisted of four stitches of carbolized silk!* That is all. Healing took place with the formation of a utero-abdominal fistula. Surely, there can be no stronger proof of my conscientiousness in enumerating everything ever written about the symperitoneal suture than that I pointed with praise to Baker's statement that he inserted his sutures near the edge of the incision, "so that, when they were tied, they brought the peritoneal coats together first," though nothing further was contained in his remarks. Lungren was cited by me with praise because he laid particular stress on the symperitoneal union; I cited his statements, "great care being taken to unite the peritoneal edges," and "the peritoneal surfaces are retained in contact until union takes place and all danger of escape of fluids averted." Let us see now *how* Lungren stitched the uterus. In his first operation (1875), he inserted altogether only five silver sutures; in his second operation, he inserted twelve horse-hair sutures through half the thickness (!) of the uterus; of these, the hemorrhage not ceasing (!), the last three were replaced by

silver sutures, and still the hemorrhage from the incision was not arrested.

Every unprejudiced person will see at once how greatly Lunn-gren's mode of suturing differs from mine; he carried the suture only through half the thickness of the uterine wall, the number of stitches was scarcely half that in my method, the suture material chosen by him proved so unsuitable that he had to replace it in part by another; but, particularly, his suture was only single-rowed, and though he called attention to the importance of uniting the peritoneal edges, *he did not employ a separate symperitoneal plane suture*. Besides, how little Lungren was able to raise himself above his single case to the level of a more general conception is shown by the facts that he fails absolutely to deduce a peculiar method from it; that Porro was apparently unknown to him; that he sterilized his patient by ligation of the tubes without any pressing reason therefor. And Spencer Wells? I have literally given his remarks on the symperitoneal suture of uterine wounds, and drawn from them the deductions applicable to the Cesarean section. That Spencer Wells himself did not do so is beyond any doubt. This is evident even from the title of his lectures which Garrigues, of course, suppresses and which is: "Observations on Recent Improvements in the Mode of Removing Uterine Tumors." That Spencer Wells did not dream of applying his proposals to the Cesarean section, I have incontestably proven on p. 605 of this paper. Garrigues attributes to him a rôle which he himself did not claim.

But to say that Spencer Wells has devised a two-rowed suture, as Garrigues asserts, is simply an untruth. *Not one word of it is to be found in Spencer Wells' writings*. He says merely: "I would insist that the peritoneal edges of the divided uterine wall should also be carefully brought together—like the parietal peritoneum of the abdominal wall—by many sutures, or by uninterrupted suture along the whole extent of the gap." This uninterrupted suture has been used by Spencer Wells in a case mentioned on p. 99 of my book. Though the patient recovered, no one would think to-day of imitating it, for the reasons explained on p. 166. It is only by a continuous tier-suture with chrome or juniper catgut, similar to the colporrhaphy and perineal suture as recommended by Schroeder, that the uterine wound could be closed as by an interrupted two-rowed suture, but without offering the security of the latter. This perfected uninterrupted suture was entirely unknown to Spencer Wells. As far as I was concerned, he was merely one of the authors who recom-

mended the symperitoneal closure of uterine wounds in general; as regards the technique of the uterine suture in the Cesarean section he furnished no example.

Finally, with reference to Kehrer, who is again set up against me by Garrigues, I simply point to what I have said above. Whoever is desirous of learning the material differences existing between his and my method of suturing will find them in my paper in the *Arch. f. Gyn.*, XXVI., "Neue Beitræge zur Kaiser-schnittfrage," and loco citato.

I am tired of hunting for other tricks in Garrigues' polemic which I have passed over. My defence has any way become longer than the frivolous, purely personal, and not objective attack deserved. "*Audiat et altera pars.*" Now that I have answered Garrigues quite thoroughly, I can calmly await the verdict of all impartial persons. I have the satisfaction of knowing that it will not be unfavorable to me, for right and truth are on my side. Since the time of François Rousset and Jeremias Trautmann efforts were made to render the Cesarean operation life-saving. It was left to our day to reach this goal. I can expect that the history of our science will, in justice, accord recognition to the part I have played in the attainment of this aim by my labors and operations.

[Both parties having had an opportunity to express their views, the discussion, so far as this JOURNAL is concerned, is closed.—ED.]

BREUS' FORCEPS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—I would not reply to the criticisms of Dr. Dickinson on Breus' forceps, did not that gentleman dispute my claim, that this instrument is an efficient substitute for Tarnier's, by grossly misrepresenting the action of the former instrument; a misrepresentation all the more inexcusable, since Dr. D. has had the benefit of reading the monograph written by Breus on the subject.

Dr. Dickinson makes this remarkable statement: . . . "in

action the Breus is scarcely more than an ordinary Simpson's forceps without the pelvic curve."

On the contrary, it is practically a Simpson's forceps with a *well-marked pelvic curve when that curve is desirable, i. e.,* when the head is high, and it is a straight forceps when the head is low and the curve not necessary to make traction in the axis of the outlet.

In the intermediate parts of the canal, the pelvic curve of the instrument accommodates itself to the axis, and it is in this sense strictly an axis-traction forceps. Being *self-adjustable*, it is more reliable than the Tarnier, with which traction is made by the obstetrician in what he *conceives* to be the axis of the pelvic canal.

I have no desire to ignore the unrivalled value of the Tarnier in the high forceps operation, but as the application of forceps under these circumstances constitutes but a small proportion of the cases demanding artificial aid, I still claim "that the Breus forceps is a simple and efficient substitute for the 'complicated' Tarnier."

A conception of the relative merits of the two instruments is best expressed by transposing the names and calling the Tarnier a "pelvic-inlet," and the Breus an "axis-traction" forceps. Rotation of the head is accompanied by a motion of the forceps on their longitudinal axis, the sagittal movement of the head is permitted by the independent motion of the blades on a transverse axis.

It is to be hoped that the worthy German accoucheur will be spared the agony of having Dr. Dickinson's diagram presented to his gaze as an American interpretation of his views on the mechanism of the forceps which bears his name. The feelings of Dr. Breus would be akin to those of the now illustrious Jenner when he was the object of ridicule by the caricaturists of his day.

This instrument is represented applied at the brim with the blades in a position they are never intended to occupy except when at the outlet.

HENRY D. FRY, M.D.

WASHINGTON, D. C.

EDITORIAL.

THE following notice has been sent to this JOURNAL, with the request that it be inserted where it will meet the eyes of the profession in this country. It gives me pleasure to comply with the request, and to open the subscription. *Contributions may be sent to me*, and will be forwarded to Berlin on July 1st; they will be acknowledged by letter and duly reported in this JOURNAL.

PAUL F. MUNDÉ.

20 WEST 45TH STREET, May 1st, 1887.

AN APPEAL FOR A MEMORIAL TO PROFESSOR CARL SCHROEDER.

The undersigned have combined for the purpose of erecting to the memory of their friend and teacher,

PROFESSOR CARL SCHROEDER,

who died on Feb. 7th, 1887, a suitable testimonial. Our idea at present is to place a marble bust of the deceased in the Gynecological Clinic at Berlin; but this project is subject to future modification. We request those members of the profession, and others who have benefitted by Prof. Schroeder's advice and treatment, and who desire to assist us in our enterprise, to send their contributions to Dr. J. Veit, Berlin, W. Matthäi-Kirchstrasse 12.

Frommel (Munich), Gusserow (Berlin), M. Hofmeier (Berlin), Leube (Würzburg), Olshausen (Halle), Rosenthal (Erlangen), C. Ruge (Berlin), G. Veit (Bonn), J. Veit (Berlin), R. Virchow (Berlin), Waldeyer (Berlin), Winter (Berlin); the Obstetrical and Gynecological Society of Berlin through J. A. Kaufmann, Löhlein, A. Martin.

Subscriptions from America:

Paul F. Mundé \$25 00

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, April 5th, 1887.

The President, DR. P. F. MUNDÉ, in the Chair.

CASE OF PLACENTA PREVIA TOTALIS—GENERAL ADHESION OF THE PLACENTA—RECOVERY AFTER PROFUSE HEMORRHAGE.

DR. J. L. MORRILL related the following history: Dr. F. O. Manning was called on February 28th to attend a Polish woman, æt. 24, in her first confinement. A midwife was in attendance, but she found that something was wrong, and sent for the doctor. He found, on inquiry, that on the night of the 25th the patient had begun to flow profusely, and this hemorrhage had continued, at intervals, until she became alarmed. The pregnancy had advanced to full term, and the patient stated that she had enjoyed excellent health throughout the entire period and had never lost any blood until the time mentioned.

On making an examination, Dr. Manning found that the os externum would admit only the index-finger, while the os internum was more patulous; just within the latter, a thick, spongy mass was felt, but the presenting part could not be detected. External palpation showed that the head presented. The diagnosis of central placenta previa was made, and a light tampon was inserted, on account of fresh hemorrhage following the examination. Dr. Bradshaw saw the patient later and confirmed the diagnosis; with his assistance, a firm tampon was introduced, and half-drachm doses of ergot were administered every two and one-half hours, as there had been no labor pains. Bearing-down pains came on, and it appeared as if some progress might have been made; but, on making an examination in the evening, the os was but little more dilated. A fresh tampon was inserted, and morphine was ordered. The next morning, the patient had no pains, but they were re-awakened by small doses of ergot. In the afternoon, Dr. Flynn saw the patient with Dr. Manning, the tampon was again removed, and no change in the condition of the os was apparent. The removal of the tampon was followed by a hemorrhage (the patient losing eight or ten ounces of blood), so that it was necessary to replace it at once. In the evening, Drs. Morrill, Coe, Bradshaw, and Flynn saw the patient with Dr. Manning, and as the os was then dilated sufficiently to admit the hand, it was decided to deliver at once. The patient was chloroformed, and Dr. Morrill attempted to separate the margin of the placenta, but it was so firmly adherent to the uterus that this was found to

be impossible. He then perforated the placenta, and grasped the head and held it firmly, while pressure was maintained from above. The forceps were applied, and with great difficulty a dead child was delivered. The cord was not only unusually short, but it encircled the child's neck twice: it parted during the efforts made to disengage it. An alarming hemorrhage followed the delivery, the uterus failing to contract. The marginal zone of the placenta was so firmly attached to the uterus that it was necessary to partially evert the organ and to peel off the adherent mass with the finger nails and the handle of a scalpel: in fact, it was not easy to tell whether the placental or uterine tissue was being torn. The patient had lost so much blood and was so nearly pulseless, that it was not considered prudent to prolong the operation. The detached portion of the placenta was hastily removed with scissors, and the flabby, partly-inverted uterus was replaced. Contraction was finally obtained by means of faradism, one pole being introduced into the cavity of the organ, while a sponge electrode was placed over the fundus. The hemorrhage then ceased, but the patient was apparently moribund. Hypodermics of brandy and ether were administered, the woman's head was lowered, and the lower extremities were elevated and bandaged. Dr. Coe procured a transfusion-apparatus and introduced a small quantity of salt solution into the left median basilic vein; but there was some obstruction at a point above the incision, and the attempt was not successful. The perineum, which was torn during the rapid extraction of the head, was sewed up, and the physicians left the patient at midnight, having unanimously decided that her death would occur within a few minutes. Soon after their departure, she suddenly rallied and called for a drink of beer. The next morning, she was feeble, the respiration sighing, the pulse being 130, and the temperature $100\frac{2}{3}^{\circ}$.

To the constant and skilful care of Dr. Manning, who assumed the entire charge of the after-treatment, her recovery was undoubtedly due. On the second day the temperature had fallen to $99\frac{1}{2}^{\circ}$, but the pulse was still rapid. Vaginal injections of carbolic acid solution were employed. She took plenty of nourishment, and was absolutely free from pain. On the fourth day the lochial discharge had become extremely offensive, while the evening temperature rose to $102\frac{3}{8}^{\circ}$. On the following day, an extensive diphtheritic exudation appeared on the perineal wound; as no union could be expected, the stitches were divided, and the sloughing surface was freely dusted with iodoform. Intrauterine irrigation was employed. On the sixth day the temperature rose to 104° , but fell to $102\frac{7}{8}^{\circ}$ after the uterus had been washed out. There was no tenderness on making deep pressure over the organ. The evening temperature on the following day was $103\frac{2}{3}^{\circ}$, but the next morning it had fallen to $98\frac{1}{2}^{\circ}$. A large fragment of placenta came away on washing out the uterus. On the twelfth day the tem-

perature rose to $103\frac{2}{3}^{\circ}$, but fell to 100° the next morning after a piece of placenta had been washed away. [From this time until the present date the recovery has been uninterrupted, the temperature never exceeding 100° .]

DR. COE described the appearance of the placenta, which was different from any that he had ever seen. He had noticed, when examining the patient, that the presenting portion did not have the usual, soft, spongy feel, but gave the impression of being a smooth surface. This was explained by the fact that the placental tissue within the os was much atrophied, so that the cotyledons were unusually small and few in number, while they were inclosed more or less in new-formed connective tissue, which resembled the adhesions remaining after peritonitis. Bands and nodules of indurated tissue were scattered throughout the placenta. The peripheral portion of the latter was intimately united to the uterus by this same newly-formed tissue, which covered the under surface of the placenta in such a uniform layer that it was difficult to see how the fetus had been nourished until term. The latter, it should be observed, was well developed and had apparently been dead but a short time. Microscopical sections of the placenta showed general placentitis (chronic indurative inflammation), most marked at the central portion. The vessels were of small size, showed hypertrophy of their fibro-muscular layer coats, and were buried in dense fibrous tissue. There were no evidences of acute inflammation, fatty degeneration, or calcification in the sections examined.

DR. PARTRIDGE said the peculiar pathological condition of the placenta, by preventing hemorrhage, had doubtless saved the patient's life.

CURIOUS BALLS OF SEBACEOUS MATTER FOUND IN A DERMOID CYST.

THE PRESIDENT exhibited a quantity of fluid, containing numerous small pea-shaped masses, of quite uniform size, which were composed of the ordinary fatty material found in dermoid cysts.



The history of the case was briefly as follows: He had first seen the patient (who came from New Hampshire) a year before, when she consulted him for an abdominal tumor. He advised early removal, but she returned home. In January last she returned,

being then six months pregnant. He decided to induce premature labor, which was done at the middle of the seventh month and a child was born, which was now living. Five weeks later he performed laparotomy, and removed a large dermoid cyst which contained twelve pounds of fluid and solid sebaceous matter, including the curious bodies presented. Within the sac were also found the usual quantity of hair, but no bones or teeth. The opposite ovary was removed, as it was diseased. The speaker added that he had never seen such bodies before, and was at a loss to account for their formation.

PROF. W. H. WELCH, of the Johns Hopkins University, Baltimore, kindly sent the following report of his examination of the specimen:

"The fluid is turbid, of a yellowish-brown color, and thin consistence. Within the specimen of fluid are floating spherical masses, of nearly equal size, and of the same appearance. These masses are either round or slightly oval. They are of a buff color. Their diameter is about 1 cm. Their surface is smooth, without any appearance of facets. The consistence of the masses is soft, about that of putty. With the naked eye can be seen a number of short hairs upon the surface of the balls, as well as in the interior after crushing them. These hairs are mostly blond, but some are black.

"Upon microscopical examination, the spherical masses are found to be composed of small oil-globules, hairs, flat, non-nucleated epithelial scales, a few crystals of cholesterin, some irregular particles of bright yellow pigment. There is nothing which can be regarded as the nucleus of the balls, the centre having the same composition as the rest of the mass.

"The microscopical examination of the fluid shows oil-globules, fatty granular corpuscles, flat epithelial scales, hairs, and a large number of very pale, homogeneous spindles. These spindles vary in size, being on the average about fifteen to twenty micromillimetres long, and seven to ten micromillimetres in diameter at their widest part. The nature of these spindles I do not know. They are probably not micro-organisms. They stain slightly in gentian violet.

Remarks.—The chief interest of the specimen is, of course, in the spherical masses. These are composed of the same fatty material usually found in dermoid cysts. They have been observed by others¹ (Rokitansky, Routh), but a satisfactory explanation of their formation has not been given. Rokitansky attributes their formation to the breaking up of the fatty substance in the dermoid cysts by a hemorrhage or some exudation into the cysts. In his cases there was torsion of the pedicle, and he considers that the rotary motion thereby given to the tumor affords an explanation of the moulding of the irregular clumps into round masses. In Rokitansky's cases there was a nucleus of cholesterin crystals in the balls, but no such nucleus exists in the present instance. There are very few crystals of cholesterin. The yellowish granules of pigment are probably blood-pigment, and their presence

¹ Rokitansky, "Lehrb. d. path. Anat." Wien, 1861, Bd. iii., pp. 414 and 429. Olshausen, "Die Krankheiten d. Ovarien," p. 402. Stuttgart, 1877.

speaks in favor of the occurrence of a hemorrhage at some time into the cyst."

WILLIAM H. WELCH.

DR. COE could not recall any similar case. The fat-balls looked as if they had been produced by some rotatory movement within the cyst.

DR. H. C. COE read the following paper, entitled:

THE TREATMENT OF ACQUIRED ANTEFLEXION ASSOCIATED WITH DISEASE OF THE OVARIES, WITH REFERENCE TO THE QUESTION OF STERILITY.

I have intentionally selected this lengthy title for my brief paper, in order to make it clear at the outset that I expect to limit myself to a single topic. I trust that the discussion will also be limited in its range. It would be highly interesting to consider the subject from a pathological standpoint, with special reference to the much vexed question of obstructive dysmenorrhea, but I shall resist the temptation to digress in that direction. The pathology of the ovaries is also an inviting theme, but we shall only touch upon it incidentally.

There is probably not one of my hearers who has not been struck with the frequent association of antelexion (usually the acquired form) and prolapse and enlargement of one or both ovaries. Among twenty-five patients who attend my clinic in an afternoon, I have not infrequently noted this condition in two or three, while I can recall at this moment several cases in which, while examining under ether, unmarried women with antelexion the existence of unsuspected (or rather, unrecognized) ovarian disease was clearly established in addition to the displacement. These facts are so elementary that statistics are unnecessary. I have not yet satisfied myself as to the true cause of this association; that the two morbid conditions are independent of each other is naturally improbable. The ovarian trouble can have nothing to do with the production of the uterine flexion, but the converse cannot be maintained. It may fairly be assumed that antelexion and prolapse of the ovaries are sometimes produced simultaneously in consequence of peritonitic adhesions, as in a specimen now in my possession. Or we may infer, in accordance with the common theory of pelvic congestion, that the ovaries are secondarily affected in consequence of the displacements while their prolapse is favored by the position of the uterus, as well as by the traction on the broad and ovarian ligaments. But the pathological sequence is rarely traceable, and we can at best only guess at the order of the morbid changes.

Any attempt to separate the symptoms in these cases into two distinct classes, some being referable to the uterus, others to the ovaries, must soon appear futile to the thoughtful observer; in fact, the time is past when each organ in the pelvis is assigned its own set of symptoms supposed to be due to morbid conditions in this organ alone, without reference to its intimate connection with

other organs. The disposition to draw a sharp line between ovarian dysmenorrhea and the form supposed to be of purely uterine origin is less apparent among gynecologists than it used to be. We may use these terms in the lecture-room still, but most of us are rather inclined to agree with Dr. Emmet, when he says: "From the marked character of the ovarian pain, it is often assumed that any uterine disease which may exist at the time is due to the ovarian condition, while the fact is that both uterus and ovaries are but suffering from the effect of a common cause." Some objections might be raised to a subsequent statement by the same writer, that "ovarian disease has but little share, as compared with the uterus, in the pain of menstruation."

To return to the subject. We cannot usually decide in these cases of ante flexion with chronic oöphoritis whether the pain before and during menstruation is entirely ovarian, or is partly of ovarian and partly of uterine origin. In the majority of the cases that have come under my observation, the ovarian element seemed to be dominant, as shown by the peculiar character of the pain, its location, its occurrence several hours (often days) before the appearance of the flow, and the usual reflex disturbances, especially nausea, mastodynia, etc. On the other hand, the colicky pains, relieved by the expulsion of clots—commonly regarded as pathognomonic of ante flexion—are sometimes observed in the same patients after the flow has been established.

But, without dwelling further upon the subject of dysmenorrhea, let us direct our attention to a condition which, in the patient's opinion, possesses more importance than we are apt to assign to it. Dr. Sims thought it sufficiently important to form the subject of his classical monograph, but at the present day we concern ourselves more with the cure of dysmenorrhea, rather than with that of sterility. Yet, with all their agonizing sufferings at each menstrual period, how common it is to hear these unfortunate childless women say that they would cheerfully endure all if there was only some prospect of their eventually becoming pregnant. It is only after we have assured them that this hope is vain that they are willing to submit to laparotomy for the relief of the pain. No little responsibility is assumed by the gynecologist when he informs such patients that because ovarian disease has existed for one, two, or more years, her present sterile condition will be permanent. We are too apt to jump at the conclusion that such women are "unsexed," and therefore that oöphorectomy will not deprive them of any future possibility of conception. The questions naturally arise: Are we to wait for a certain length of time in order to be sure that the woman cannot possibly conceive? How many years shall we wait? Is the patient to be allowed to go on suffering, when she might be relieved by laparotomy, simply to satisfy us as to the permanence of her sterility? In reply to these questions, let me cite briefly

two cases which I have had under observation during the past year. I shall avoid all irrelevant details. Both patients are fine, healthy women of thirty or upwards, one has been married three years, the other nine, and their histories are quite similar, viz.: Before marriage they menstruated without much pain, but soon after they began to suffer at each period, the *ultima causa* being obscure. I suspect that many young women have attacks of subacute peritonitis soon after marriage, from matrimonial causes, into which it is extremely difficult to inquire. At any rate, these two women developed well-marked ovarian trouble, added to which were the symptoms noted by some authorities as characteristic of "obstructive dysmenorrhea." Mastodynia, painful defecation, shooting pains in the limbs on locomotion, etc., were present. One patient entered the Woman's Hospital five years ago, when I was an *interne* in that institution, and was treated for several months for acquired antelexion. She had an enlarged and prolapsed ovary. After she left the hospital, I lost sight of her until last spring, when I assisted Dr. Kletzsch in divulsing her cervix. Under ether the enlarged ovaries (especially the left) were readily felt. The cervical canal was not contracted, admitting a good-sized sound, but there was a distinct angle of flexion. The dysmenorrhea was not relieved by the operation, but a few months after, the lady (who had been sterile for nine years) exhibited the ordinary signs of pregnancy, and expects to be confined soon. The other patient was under my care in the clinic for several months. She had shortening of the utero-sacral ligaments causing antelexion, and the canal barely admitted a small sound. The ovarian symptoms were marked, and dyspareunia was a distressing element in the case. After keeping her under observation for nearly a year, and finding no improvement, I sent her into the hospital where she was further treated, and laparotomy was proposed. She was anxious to have something done, but still clung to the hope that she might have children, and refused to have her ovaries removed. Divulsion was performed, simply as an experimental measure, with the hope that it might relieve the dysmenorrhea. She menstruated once after leaving the hospital, and then became pregnant. Her pregnancy was normal, she had little or no pain in the ovaries, and on examining her between the fifth and sixth months, I found that the prolapsed organs could not be touched. I have recently noted this curative tendency of pregnancy in a patient who, when examined during the early months, had a distinct mass extending outward from the left side of the uterus, quite tender on pressure. It became elevated as the organ rose out of the pelvis and gave no trouble, except occasional pains in the left side. The confinement was easy, and now when involution is complete, the enlargement cannot be detected, nor is there any tenderness around the uterus. To return to the second of the two

patients—she was confined two months since, the labor being natural as far as I know.

These are only two cases, yet they were observed within a short time and by one whose clinical opportunities are quite limited as compared with those enjoyed by many in this audience. I am sure that you can all recall similar ones. That they are not numerous does not invalidate the single point, which I wish to make—that before deciding positively that a woman's ovaries are of no further use to her, and urging this as a motive for removing them, it is well to try the effect of divulsion, simply as an empirical measure. It would be interesting to know in how many instances men like Goodell, who use the dilator constantly, have succeeded in curing sterility in patients with well-marked ovarian trouble in addition to the ante flexion. But, I do not need statistics to convince me that the tentative operation to which I have referred is both rational and is worthy of a fair trial. Whatever its *rationale* may be (I am inclined to think that the effect is purely mechanical), conception follows so promptly, when it occurs at all, that the result is something more than one of those coincidences which are so common in medicine, and which we often invoke in defence of our skepticism. Why dilatation should give marked relief in one case of dysmenorrhea, in which ante flexion and prolapsed ovaries are present, and not in another where the conditions are apparently identical, no one can say. I had a curious example of this in one family, three members of which had ante flexion, while in two of the young women the ovaries were prolapsed. I divulsed in all three. At the expiration of six months, two of the girls reported that their menstrual pains were greatly relieved, while the third (whose ovaries were enlarged and tender) remained precisely as before. In like manner, we can never venture to predict what will be the results of dilatation in the case of two sterile women whose local conditions may appear to be the same. There may be wide variations, which escape us, either in their uteri or in their ovaries, but shall we not give them both the benefit of the doubt? And this brings me back to an old theme, upon which I have already harped—that disease of the ovary, indicated by moderate anatomical changes in the gland, as well as by disturbance of its function, does not necessarily imply loss of function. Ripe ovisacs and recent corpora lutea are so often seen at the operating-table in ovaries that have been removed from patients who have had dysmenorrhea for years, that it is safe to say that we all recognize the fact that a woman who menstruates with difficulty, none the less menstruates, and that we are not in a position to affirm unhesitatingly, either before or after opening the abdomen, that ovulation has ceased and that conception is no longer a possibility. The length of time during which the ovarian symptoms have been present does not furnish a positive criterion, since chronic oöphoritis of a few months' standing may disable the glands quite

as effectually as an older process. I neither venture to theorize on the anatomical condition, nor do I offer any explanation as to the *modus operandi* of the treatment, which, as I admitted, is mainly empirical. It does no harm in suitable cases, and is at least worth trying, before we deprive a woman forever of the long-cherished hope that she may yet become a mother. The possible beneficial effect of pregnancy upon the ovarian trouble opens up a fruitful field for investigation.

I expressed the opinion that no harm followed divulsion in suitable cases. This implies that some cases are unsuitable, even for such limited operative interference. It is unnecessary to dwell upon the counter-indications, since they are the same as in any minor operation upon the uterus. I should not expect to accomplish anything by dilatation in a case in which the ovaries were large, immovable, and very tender by reason of recent inflammation—in short, it is desirable to use a fair amount of discrimination in selecting test-cases. I should regard as a favorable subject one in whom the flexion was quite sharp, and was associated with more or less stenosis of the os externum, while the affected ovaries were not unusually tender, and the age and condition of the patient were such as make it evident that her sexual powers were not on the wane. It would be foolish to expect any brilliant results in a poor anemic young woman, whose menstruation is practically absent, or in one who is near the menopause.

As regards the prognosis, it should, of course, be extremely guarded. If the patient understands that the operation is an experiment, and one that is only rarely successful, she will feel less keenly the disappointment that so often follows.

DR. WYLIE thought that the reader had mistaken a symptom for a disease. Antelexion was more often due to non-development than to a former peritonitis. What Dr. Coe had described in his paper as ovarian disease was rather to be regarded as a purely functional trouble; so far as the ovaries were concerned, dysmenorrhœa was not an indication that they were diseased. The dysmenorrhœa in these cases of antelexion was due to the diseased condition of the endometrium, and was nearly always cured by divulsion, followed by the application of pure carbolic acid.

DR. COE replied that symptoms due to non-development of the uterus or ovaries always dated from the beginning of menstruation and did not appear after a woman had been menstruating normally for years. He could not see how there could be any question about the origin of an antelexion which was clearly produced by shortening of the utero-sacral ligaments from previous peritonitis, as in the class of cases to which he had referred. The history alone, aside from the local condition, was sufficient to refute Dr. Wylie's theory. As regarded the condition of the ovaries, he would only call attention to the fact that, clinically, a purely functional affection of the ovary, even though it might cause tenderness and enlargement, would be more apt to manifest itself only at the menstrual period, and not all the time, as was the case when actual disease was present. When patients were kept under

observation for months and years, there ought to be no great difficulty in deciding as to the true condition.

DR. HANKS believed that, in at least three out of five cases of antelexion, the patients could be relieved by divulsion without resort to posterior section. He was sure that antelexion was frequently acquired, and was to be ascribed to a former inflammatory process behind the uterus; in fact, he had examined patients after an attack of pelvic inflammation, and had discovered antelexion where it had not existed previously. Dysmenorrhea was due, not only to obstruction of the canal, but also to inflammation around the uterus and appendages, and in many cases the patient could be cured by reducing the inflammation. The speaker was sure that divulsion often cured sterility.

DR. POLK believed that chronic inflammation of the uterus had much to do with the production of the stenosis in cases of acquired antelexion. He thought that we had fallen into a loose way of talking of ovarian disease. We had originally approached the subject of ovarian pathology from the wrong direction, studying tumors of the ovary and referring them to disease of that organ. Now we were beginning to learn that many symptoms originally ascribed to ovarian disease were really of tubal origin. In reply to a question from the speaker, Dr. Coe defined more exactly his view of the condition of the ovaries in the cases under discussion.

DR. McLEAN said that, as he understood the point made by the reader, it was as follows: Many patients presented well-marked symptoms of ovarian disease, and on examination their ovaries were found to be enlarged, prolapsed, and extremely tender. Some surgeons jump at the conclusion that laparotomy is indicated in such cases, while others are more conservative. The speaker distinctly recalled several cases in which dysmenorrhea and sterility were cured by divulsion, after laparotomy had been proposed. What gynecologist was prepared, by reason of his superior *tactuseruditus*, to state positively that a given enlarged and tender ovary (perhaps three or four times as large as normal) was so hopelessly diseased that it must be removed, or, on the other hand, that it could safely be spared? The speaker thought that he could detect an enlarged and prolapsed ovary, but he saw no hope of ever being able to acquire sufficient skill to recognize by the touch the exact extent of the anatomical changes within it.

DR. CHAMBERS was strongly in favor of divulsion, followed by the introduction of the glass stem. After this treatment he had known several cases in which women with diseased ovaries had become pregnant, even after laparotomy had been proposed. He would certainly not hesitate to remove such an ovary as was described by Dr. McLean, which was enlarged to several times its normal size and was extremely tender, especially if the patient was steadily growing worse. He believed, however, that in every case the patient should have the benefit of the doubt, and that divulsion should first be tried.

DR. JANVRIX thought that the paper was quite clear. The only part to which he objected was the designation of divulsion as an "empirical" measure. He regarded it as unquestionably the proper procedure. In these cases of antelexion, the mucous membrane of the cervix and uterus was diseased. Not only was the condition of the endometrium improved by divulsion, but if

the trouble in the ovaries was merely functional, it would certainly be relieved.

DR. CHAMBERS insisted upon the advantage of introducing a glass stem after performing divulsion; in order to benefit patients with ante flexion, the stem must be worn persistently for a long time after the operation. He had sometimes been obliged to incise the cervix slightly.

DR. JANVRIN referred to a paper which the late Dr. Peaslee had read before the Academy of Medicine twelve years ago, on "Dissection and Incision of the Cervix." Dr. Peaslee at that time showed an instrument with which he divided a few fibres of the internal cervix, and then dilated with graduated sounds. The speaker still adhered to this method in every case; he was accustomed to use tupelo tents also in many instances to hasten and render more effective the "dissection," and after that to use the sounds.

DR. WYLIE said that he was one of the early advocates of divulsion. If a patient came to him with ovarian symptoms and severe dysmenorrhea, he would employ divulsion, even if there had been a recent peritonitis; he would not hesitate to dilate as soon as he had reduced the inflammation to a subacute stage. Ovarian dysmenorrhea was a misnomer, since nine times out of ten the trouble was in the uterus. The pain in the ovaries was relieved by the flow. The speaker still insisted that the class of patients described by the reader suffered from functional, rather than from organic, disease of the ovaries, and there was no question but what, in such cases, dilatation or divulsion was the proper treatment.

DR. McLEAN said that he still felt that his question had not been answered. How, he asked, can we decide whether an ovary should or should not be removed when it is only one-half or two-thirds larger than normal?

DR. CHAMBERS replied that Dr. McLean had originally supposed that a given ovary was two or three times as large as normal, that it was prolapsed, and that it was very tender. The condition was quite different from that which he had just pictured.

DR. McLEAN said that he spoke from actual experience. He had recently attended in her confinement a lady, one of whose ovaries was formerly enlarged to three times its normal size; it was extremely tender, and its removal had been advised by an eminent laparotomist. Now the organ could not be detected.

THE PRESIDENT said that it was generally conceded that we could not positively affirm the point at which an ovary had undergone such anatomical changes as to be functionally useless. Cases of pregnancy had been reported after removal of both ovaries (one case by Schatz), after excision of diseased portions of the glands (as practised by Schroeder), and after ignipuncture of cystic follicles during removal of a tumor of the other ovary (Pippinsköld). The speaker had employed divulsion for many years with or without the knife, and glass stem in addition, and in all classes of patients, and had seen much benefit result in dysmenorrhea, and some in sterility.

Stated Meeting, April 19th, 1887.

The President, DR. PAUL F. MCNDÉ, in the Chair.

DR. W. M. POLK read the following paper, entitled

LAPAROTOMY FOR ADHERENT RETROFLEXED OR RETROVERTED UTERUS.

A. W.—, aged 38. This patient has suffered from pelvic pain for several years. The originating cause was obscure, but it seemed to have been due to pelvic inflammation induced by treatment for posterior displacement of the uterus. Examination showed that the uterus was retroverted and bound down. Sensitive masses were discovered on both sides of the uterus in the broad-ligament regions. Upon opening the abdomen, the remains of pelvic peritonitis were evident. The uterus was fixed in the cul-de-sac. Chronic salpingitis and periovaritis were present on both sides, the tubes and ovaries being attached to the posterior face of the broad ligaments, but not to the pelvic floor.

The adhesions binding down the uterus were separated and the tube and ovary upon the left side removed, after which the mass upon that side could no longer be felt. The appendages upon the right side were not disturbed, owing to the accidental wounding of a vessel close to the uterus. There was prolonged and very troublesome bleeding. By the time this was controlled I did not think it wise to further prolong the operation, the patient's condition forbidding it. This case afforded me an opportunity to study the behavior of an inflamed tube after the adhesions binding it down and crippling it had been torn up. I carefully freed the right tube and ovary from the adhesions binding them to the posterior face of the broad ligament, and satisfied myself that they, as with the appendages on the left, represented the mass felt in this region through the vagina. I used a drainage-tube, as there had been a good deal of manipulation in the pelvis. This served the additional purpose of keeping the uterus forward.

The patient remained in the hospital nearly two months, and when I examined her just before her departure I found both sides of the uterus free from the masses, and from sensitiveness as well. The permanency of the improvement upon the right side is to be determined by time. But if salpingitis and peritonitis were the result of a retroversion, the correction of the latter in the manner employed in this case, together with the treatment of the tubes after the fashion employed with the right, might be found not only safe, but complete and satisfactory. Upon this subject I hope soon to present further observations. I will merely say here that I am convinced that the only reliable treatment for a displaced and adherent uterus is to be found in abdominal section. Whether the appendages are to be removed in all these cases is, in the light of this case, to me an open question.

The report with which I head this article was made in conjunction

with several others, introduced to the notice of the Society of "Physicians and Pathologists," at Washington, June 18th, 1886. With its fellows, it was brought forward to aid in establishing the identity of "salpingitis" and its results with that condition, which we had been taught to consider as "cellulitis" and its results. But, as will be seen, the report broached another subject, and suggested certain procedures which it is my desire to bring before you to-night. I will say here that the patient mentioned above reported to me within two months past, and an examination showed her to be in excellent condition locally and generally.

The comparative frequency of the disorder which forms the subject of this paper, and the not infrequent failure of measures of cure other than those suggested here, is the excuse for bringing the matter to your attention. The time permitted by our rules is too limited for me to do more than present my case in as condensed a form as possible.

The pathological condition with many of its relations is one long recognized, but not until quite recently were we in position to determine the essential morbid factor. We knew that the uterus was imprisoned by peritoneal bands; we also recognized the painful indurations so often present upon one or both sides of the organ in the broad-ligament regions, but we referred them, as we did the uterine adhesions, to "cellulitis."

Laparotomy has exploded this pathological conception, and has shown us that while the imprisoning bands are peritoneal, they result from salpingitis, and that the sensitive spots or masses in the broad-ligament regions are not the remains of a cellular inflammation, but tubes and ovaries, bound, like the uterus, in abnormal position.

Under the old pathological conception, the uterus naturally attracted most attention, and much of the misery experienced by these sufferers was referred to it, but now we know that the imprisoned tubes and ovaries are as important, even more important factors in the sum of morbid results growing out of the condition. So that to-day, when one approaches such cases, he meets with uterine, tubal, and ovarian disease—all dependent upon the same condition, the tube having been the channel through which they have been so seriously crippled.

To formulate it, we have retro-displacement, salpingitis, and periovaritis; all the organs imprisoned by peritoneal bands.

The symptoms present in these cases are sufficiently familiar to all present, but I desire to point out that they are of complex origin, the uterine enlargement and tenderness, its interference with adjacent organs, and the endometritis being clearly due to the faulty position of the uterus, but the menstrual and intermenstrual pelvic pains cannot be traced wholly to this organ. They are due to faulty conditions in the tubes and ovaries, no doubt, more than to faulty conditions in the uterus: we may for-

mulate it thus: The amount of pain and discomfort is equal to the amount of interference with the menstrual congestion of all these organs.

Granting this, we next approach the question of operative treatment.

Menstrual congestion lying behind the suffering, the first thought was, let us remove the ovaries, and if need be the tubes, and stop this periodical congestion. Again it was said, those organs are diseased, are useless; for this reason then, as well as to stop periodical congestion, we will remove them. No one can question the soundness of these arguments, except perhaps the last, but do they not carry us too far? Can we not relieve and even cure our patients short of either of these radical procedures? I think we can. Let us not fix our minds too closely upon ovulation in this matter, let us accept it as something to be preserved, and turn our attention to that which renders it a distress. I think I am right when I say that it is a distress in these cases, because the uterus, tubes, and ovaries are so hampered by adhesions that they cannot properly respond to the periodical congestion set in motion by ovulation. All these organs have an arrangement of vessels which closely allies them to erectile tissue. Now bind them down, distort them, prevent them from expanding and contracting in response to the requirements of ovulation, and you have enough, not only to perpetuate the inflammatory condition responsible for their state, but even to induce it anew.

I would suggest, then, that these cases be treated by laparotomy, by freeing the uterus, tubes, and ovaries from the adhesions which distort and bind them down, and lastly by so treating the uterus as to keep it forward, and lift its appendages away from the pelvic floor. By so doing we restore circulation through these organs, as nearly as may be in accordance with physiological law, and thus best stop the menstrual and intermenstrual pains with their associate symptoms. This procedure, so far as the tubes are concerned, presupposes the absence of fluids distending them—an absence I believe to exist in the majority of cases, especially if they be of long standing, for time has a great influence in bringing about absorption of fluids, here as elsewhere in the body.

Should the tubes be found distended with morbid fluids, we have an addition to the condition I particularly dwell upon—an addition which at present can perhaps be best met by amputation. In all cases the tubes should be carefully inspected, so as to avoid the possibility of freeing and leaving a tube whose end may leak septic matter into the peritoneal cavity. If there be catarrhal inflammation of the tubes, even though they be slightly distended, I am disposed to believe (though I will not press this point now), from the result in one case, that careful cleansing of these cavities, together with drainage and washings by water of the

pelvic cavity for a day or two after the operation, will enable us safely to save them.

As to the ovaries, mere periovaritis, which is present in all these cases, is not an indication for removal. In the absence of decided enlargement of these bodies over and above the largest dimensions recognized as normal for any case, I am disposed to consider that, in spite of the periovaritis, they will cause no trouble, but continue their function without detriment to the woman, and even with comfort, in that their retention assures to her the continuance of functions which, though they may not be in all respects complete, are at least a sign to her and others that she is not singular amongst her sex.

A word now, Mr. President, in reference to the best means of keeping the uterus up. In two cases I used a simple drainage tube, carried from the external wound down into Douglas' cul-de-sac, the usual position; both cases resulted satisfactorily; in two I supplemented the operation by that of Alexander, one at the same sitting as the laparotomy, the other two weeks later; both did very well, and I think the position of the uterus and appendages was more satisfactory in that all were lifted higher in the pelvis.

I confess, though, that the attachment of the fundus uteri to the lower angle of the abdominal wound (hysterorrhaphy) would seem to be the more rational, because the more simple road to the accomplishment of the object. I have used a pessary, but found it objectionable because of the pain it caused. I can imagine that cotton tampons in the vagina would answer, but the additional risk of attaching the fundus uteri as stated is so slight, and the procedure (since the abdominal cavity is already open) so direct, I should commend it as the appropriate measure for the completion of our object. Were Alexander's operation as simple, I should commend it in preference, as it is more lasting in its results. But I believe a six months' retention of the organ in the upper part of the pelvis will insure to it a permanent retention of normal position.

I now beg leave to add the report of three remaining cases:

Mrs. A., æt. 26. Seven years ago had a severe attack of pelvic inflammation; she was very ill for three months, and then made a gradual recovery. The prominent local condition during the attack was a mass in the left iliac region. This slowly disappeared, but ever since the illness she has been conscious of uneasiness in that region. From the date of the inflammatory attack to the present, she has suffered severe dysmenorrhea, this pain lasting as a rule, for three days, and of sufficient intensity to compel her to keep in a recumbent posture during its continuance. Aside from this menstrual pain, the soreness in the left iliac region and an occasional attack of rheumatism, she has been in good health.

Two months ago she was married, since which she has been a

constant sufferer from pelvic pain, with much increase in the dysmenorrhea. Upon examination, I found the uterus retroflexed and firmly bound in Douglas' cul-de-sac; the body enlarged and very sensitive. Upon the left side, in the broad-ligament region, there was a fixed sensitive mass, about as large as a walnut; upon the right, in the corresponding region, a similar but smaller mass was likewise detected.

Diagnosis: Retroflexed, adherent uterus, with adherent tubes and ovaries; the whole the result of a prior salpingitis and peritonitis. I advised laparotomy, and in March it was done. The adhesions binding the uterus, tubes, and ovaries were easily broken up and those organs liberated. The tube-walls were somewhat thickened, but there was no distention of the cavities. The right ovary was small, the left somewhat enlarged; this one was much more firmly and extensively adherent than the right. A drainage tube was placed in position, as usual, behind the uterus, and the wound was closed. The patient made a good recovery, and has had one menstruation free of pain.

The uterus to-day is in normal position, with the exception that it is somewhat lower in the pelvis than I would prefer. It is now movable, and it, together with the appendages, is as free from pain on pressure as could be possible so soon after operation.

B. C., æt. 31. Married and has had four children. At the birth of the last, five years ago, had an attack of pelvic inflammation. This left her with dysmenorrhea, backache, and constipation; sexual intercourse also became painful.

These symptoms had continued to date.

Wearying of the various efforts at cure to which she had been subjected, she sought relief in an operation. Inquiry showed that, short of the operation, her treatment had been thoroughly and carefully conducted. She stipulated that her ovaries should not be removed.

Examination showed the uterus in an extreme state of retroflexion, enlarged, very tender, and firmly fixed in the cul-de-sac of Douglas. On either side of the uterus were sensitive masses, evidently the tubes and ovaries.

The abdomen was opened, and a hood of false membrane was found extending from the anterior face of uterus over the fundus to the rectum and the posterior, lower portion of the pelvis, thus firmly imprisoning the uterus. This was torn away and the organ was lifted into its normal position. The tubes and ovaries upon both sides were adherent, and they corresponded to the masses which had been found by vaginal examination. They were next torn free. The tubes were thickened, but their cavities appeared not to be enlarged.

The pelvis was now washed with warm water. A Hegar drainage tube was inserted and the wound was closed. A Hodge pessary was next placed in the vagina. The patient could not toler-

ate the pessary, so it was removed the following day. When it was removed, the drainage tube was found to have slipped from its position, and the uterus was more retroverted, but not retroflexed, the end of the tube resting upon the fundus.

It was concluded that the operation was a failure, but when at the end of a week (from the operation) a sound was introduced, and it was proven that the uterus was not adherent, but could be lifted as far forward as it had been at the section, it was determined to hold it forward by shortening the round ligaments. This was done on the fourteenth day from the section, the uterus easily coming into place.

At the end of two months the patient was discharged, the uterus was in normal position; she had menstruated twice without pain, the constipation and backache were each a thing of the past.

M. F., æt. 33, has had seven children. Sixteen months ago she had a miscarriage which was followed by symptoms of pelvic inflammation. From that time up to date she has had excessive and painful menstruation, excessive backache, and constipation. Examination showed an extreme degree of retroflexion. The fundus enlarged and very sensitive; the entire organ firmly fixed in the cul-de-sac of Douglas, ill defined sensitive spots in both broad-ligament regions. The operation was done while the patient was menstruating. The uterus was bound down by adhesions, these were easily separated, the tubes and ovaries were then freed from those which imprisoned them. Upon bringing the tubes to the surface, they were found swollen, the right one occluded, and both containing menstrual blood.

In the presence of the house staff, Dr. Fordyce Baker and Dr. Harvie, of Danville, Va., the occlusion of the right tube was opened up, both tubes were washed out with warm water and they, with the ovaries which were sound, were replaced in the pelvic cavity. A Hegar tube was next introduced, and the abdominal wound was closed. The patient's condition being good, the round ligaments were next shortened; the combined operation consuming about fifty minutes. The patient made an uninterrupted recovery, and at the end of eight weeks was discharged cured. Uterus in normal position and no sensitive spots above it. The three patients thus reported each made an easy recovery. The lessons learned from the last of the series are more numerous, and by far the most interesting, especially if it is read in conjunction with the suggestions as to the treatment of this class of cases.

In concluding this paper, Mr. President, allow me to say that it is not presented to the Society with any desire to thrust new, startling, or questionable procedures upon your attention. The condition is one which, in the presence of the freedom from excessive risk which attends the *proper* opening of the peritoneal cavity, has fairly come within the domain of laparotomy; but

heretofore it has been classed as one calling for tubal and ovarian extirpation. We all know that many women would rather continue in their suffering, if relief was only to come to them through this procedure.

It is our duty, then, to cast about and see if relief cannot come short of such an amputation. I think it can, and in the class of cases to which I refer in this paper, come with no more risk to life and health than comes through amputation.

DR. WYLIE said that he had seen Dr. Sims perform the operation described by the reader, but it was not successful, although the drainage tube was left in position for ten days. The patient was subsequently cured by removal of the appendages. He believed that whenever a Fallopian tube was occluded, it should be removed. In one instance, the speaker had detached and elevated the uterus in the manner described, and the organ retained its position, although no drainage tube was employed, but the patient was not relieved and complained greatly after the operation. The tubes were found to be occluded and the ovaries slightly adherent. Dr. Wylie thought the tendency was to regard adhesions as the disease itself, instead of the result of the disease; adhesions in themselves did not harm except as they exercised traction upon diseased organs. There were probably more adhesions after than before operation, but the former did not give rise to so much pain as the latter. If we could cure the diseased condition of the uterus, the displacement would cause but little trouble. It was rare for a woman to have an attack of pelvic peritonitis that resulted in the formation of adhesions, without the existence of disease of the ovaries or tubes; adhesions alone would do but little harm. If the appendages were diseased, the speaker would certainly remove them.

DR. LEE thought that the paper was a highly suggestive one since it took a higher view of the subject than that entertained and proposed the saving of slightly diseased ovaries and tubes. Although the cases reported were too few in number to justify any positive deductions, the speaker believed that they proved that much could be accomplished by simply breaking up adhesions. He had performed the operation twice in the manner suggested by Dr. Polk, the patients being young women with marked retroflexion, and giving a history of perimetritis; they refused to allow their tubes and ovaries to be removed. In one case the result was good, in the other not. The speaker used flattened drainage tubes which he preferred to the ordinary round ones. The failure in the second case was due to the fact that an attack of peritonitis followed the operation, in consequence of which the uterus was rendered immovable, although it remained in good position. In the first case the patient was much relieved. Dr. Sims' drainage tube (somewhat flattened) was used in both instances. As regards the value of the operation, Dr. Lee thought that in bad cases it was not likely to prove as valuable as hysterorrhaphy, on account of the difficulty of retaining the uterus in position by the tube alone. It was impossible with the present data to say much about the prospect of effecting a positive cure; we should be willing, however, to try any measure that offered a fair prospect of relief without serious mutilation of the patient.

DR. SIMS said that, in the case to which Dr. Wylie referred, the patient was a single woman, *æt.* 25, who had had retroversion for several years, and suffered with dysmenorrhea and constant headache. The uterine cavity measured between five and six inches. She had been treated for a year and a half without relief, and was anxious to have the uterus replaced. Laparotomy was performed, and an attempt was made to break up the adhesions, which were very firm and surrounded the tubes and ovaries; it was only partially successful, and there was considerable oozing. A drainage tube was introduced and left in position for ten days. At the expiration of ten days, the patient said that she had no more pain and felt well, but the following spring she returned, complaining of the same symptoms. She had been very careless and imprudent in the mean time. On examination, the uterus was found to be retroverted and adherent as before. At her request laparotomy was again performed; this time the tubes and ovaries were removed. She returned home feeling well, but was angry because the entire uterus had not been removed. It was subsequently ascertained that she made a perfect recovery.

DR. JANVRIN said that he had seen cases in which the operation might have been beneficial. If he ever performed it, he intended to attach the fundus to the abdominal wall, according to Dr. Kelly's method, especially where the uterus was considerably enlarged. It was impossible to tell before the abdomen was opened whether the appendages were sufficiently diseased to require removal. The speaker would not hesitate to leave them if he felt perfectly convinced that they were only slightly affected.

DR. POLK, replying to Dr. Wylie's criticism that adhesions did not in themselves constitute a disease, explained that they interfered with the periodical enlargement of the pelvic organs, and hence gave rise to pain. He thought that hysterorrhaphy offered perhaps the best means of keeping the uterus in position after it had been detached and lifted into position. Dr. Sims' case was not a fair example, because the tubes and ovaries were not freed; and, moreover, being adherent, they would continue to pull upon the uterus, dragging it backwards and limiting its mobility.

DR. HUNTER called attention to the fact that in 1867 or 1868 the late Dr. Sims had suggested a method of keeping the retroverted uterus in position, after it had been replaced, by passing a silver wire through the abdominal wall and into the fundus; this idea was never carried out.

DR. COE referred to some cases, recently reported by Frank, in which hysterectomy was performed in cases of retroflexion with fixation.

PREGNANCY WITH ALMOST COMPLETE OCCLUSION OF THE VAGINA.

DR. NILSEN narrated the case of a young lady (unmarried) who had missed two periods and suspected herself to be pregnant, having incurred the risk of becoming so. On examination, she was found to present the usual mammary signs of that condition. There was an atresia of the vagina, the canal being closed by a membranous septum, about a quarter of an inch thick (situated one and one-half inches from the vulva), in which was a small

opening that barely admitted a fine probe. He incised and dilated the septum four or five different times, and introduced a glass plug. The patient made a perfect recovery, although she miscarried after one of the operations.

DR. McLEAN recalled a similar case which he had observed ten years before. In this instance he did not attempt to dilate the opening, but allowed the pregnancy to advance to term, when it was readily dilated by the child's head during labor. Dr. T. G. Thomas had reported a case of the same kind.

DR. LEE said that Dr. Emmet had recorded a number of cases of atresia vaginæ, with very small openings, in which pregnancy occurred.

DR. WYLIE mentioned a case of complete atresia with retained menstrual blood, in which the bladder had been opened in a previous attempt to reach the uterus. He operated successfully, and several months after was called upon to operate upon the patient's older sister, in whom there was an exactly similar condition.

URETHRAL CARUNCLE OF UNUSUAL SIZE.

DR. SIMS exhibited a wax model of a vascular tumor of the meatus, as large as a walnut, which he had removed under the suspicion that it might be cancerous. The patient was obliged to pass her water about twenty-four times during the night, and suffered greatly each time. The growth was dissected away from the urethra, and the healthy mucous membrane was then drawn down and attached to the skin around the edge of the orifice, a catheter being left in the bladder for four or five days. The patient recovered, and there had been no recurrence of the growth, which was examined microscopically and was found to be benign.

RARE CASE OF GALACTORRHEA.

DR. WYLIE related the following history: Eighteen months before he had delivered a healthy young woman of her first child, the infant living only six hours. On the eleventh or twelfth day after labor, the temperature rose to 106° F. without any ascertainable cause; quinine had no influence upon it. The patient's breasts were very large before labor, and at the present time they continue to secrete milk abundantly. Belladonna, iodide of potassium in large doses, strapping, etc., had been tried in vain. The speaker had seen no record of a similar case.

DR. POLK said that he had cases of prolonged secretion of milk, but none in which it was so persistent as in the one reported. Milk might remain in the breasts for two years, as in the case of a negro woman which came under his observation. Just after she stopped nursing she noticed that she had a fibroid tumor; the consequent irritation of the uterus may have had something to do with keeping up the flow of milk.

DR. WYLIE said that in the case of his patient the pelvic organs were normal. There was no change in the amount of milk at the menstrual periods.

DR. PARTRIDGE said that he had seen a young woman who began to menstruate two months after the birth of her child, and had simultaneously a good deal of trouble with her breasts. The same disturbance was noted at every subsequent period. He had found Squibb's oleate of atropine an efficient, as well as an elegant preparation for use in the treatment of galactorrhea.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, December 17th, 1886.

DR. A. F. A. KING, *President, in the Chair.*

DR. G. WYTHE COOK read a paper entitled:

"IS DENTITION A CAUSE OF DISEASE?"¹

DR. G. B. HARRISON opened the discussion. He was compelled to differ with Dr. Cook, totally, in reference to the conclusions arrived at; for he believed that dentition is, both directly and indirectly, a cause of disease, not only functional, but sometimes structural also. This is an age of incredulity. There are some men who disbelieve in Holy Writ; others who repudiate the bacillus-theory of disease, even after Pasteur's useful achievements and public rewards; some who deny that vaccination affords immunity from small-pox, notwithstanding Jenner's six years' martyrdom and subsequent glorious vindication; and finally, there are these skeptics in regard to dentition as a cause of any disease whatever. They all seemed to belong in the category of those who demand more proof than is often vouchsafed to our limited intelligences. Dr. J. Lewis Smith is one of the leaders in this school, but we shall see how consistent he is in his own statements. In his several editions, he introduces the subject of dentition with this paragraph: "The opinion formerly entertained in the profession, and now prevalent in the community, that many maladies arise, directly or indirectly, from dentition is erroneous. Still there are physicians of experience who believe that teething is a common cause of certain maladies, especially of functional derangements, even of organs remote from the mouth. On the other hand, equally good observers, and the number is increasing, almost wholly ignore the pathological results of dentition. They say that, as it is strictly a physiological process, it should, like other such processes, be excluded from the domain of pathology."

Farther on, however, in the same article, he surprises us by saying: "Among the most common pathological results of difficult dentition are certain affections referable to the cerebro-spinal

¹ See original articles in this number.

system. Eclampsia is one of the admitted results." And yet again, on another page, after enumerating certain causes of diarrhea, he adds: "Such cases enable us to see that teething may really sustain a causative relation to certain diseases not located in the buccal cavity." A fair-minded reader must hold Dr. Smit guilty of self-contradiction, even though his remarks admit of quibbling explanation.

Gentlemen fortify themselves behind the idea that, as dentition "is strictly a physiological process, it should, like other such processes, be excluded from the domain of pathology."

What a fallacious argument this is! Our civilization, we all know, does not afford the conditions under which such sharp definition may be made between the physiological and pathological. Our processes are "very much mixed up." Is not reproduction the very type of physiological processes? And can we remove parturition altogether from the domain of pathology?

But it did not seem to Dr. Harrison unreasonable to account for certain seeming pathological results of dentition on purely physiological grounds. After referring to the apparent diverse points of the fifth and pneumogastric nerves, and explaining that this was more apparent than real, he called attention to the sympathy existing between the terminal filaments of the two, by stating the fact that colic in the horse may often be relieved by bleeding in the roof of the mouth. The relief in this case, like that witnessed from lancing the gums of the teething child, is due chiefly to the sedative effect of the topical bleeding upon the sentient nerve-endings of the dental branch, reflected to those of the vagus in the gastrointestinal and respiratory tracts. Another example of this sympathy is illustrated by the cure of chronic digestive disorders effected by the correction of errors of motility and refraction in the visual apparatus.

After citing various authorities to prove the dependence of certain infantile disorders on dentition, Dr. Harrison said he considered that the danger apprehended from holding the belief that dentition is one of the causes of some infantile diseases is much overdrawn. Parents are, in his experience, quite ready enough to call a doctor to their teething infants, and there is surely no excuse for the physician who neglects to treat a diseased condition because it results from *teething*, or from *any other cause*.

DR. FRY agreed with Dr. Cook to a great extent. Popular opinion, he thought, was erroneous and harmful, as under the plea that a diarrhea was merely due to dentition, the child is allowed to go without medical treatment.

Why should the second summer be dreaded? Jacobi has shown that heat is more the cause of diarrheal troubles than dentition, and that more children succumb in their first summer than in their second.

Bleeding, after lancing the gums, could hardly give relief, as, at the time of lancing, the gums are stretched so that there can be but little bleeding. If cutting be done when there is much tissue over the tooth, a cicatrix will form, and the gum be more painful than before.

DR. MCARDLE said it seemed to him that Dr. Cook considered enterocolitis as standing for all the diseases of dentition. We may have trouble in the second winter just as we have in the much-dreaded second summer. Bronchitis, for instance, is just as

common in winter as enterocolitis is in summer. For his part, he is in doubt as to what relation dentition bears to disease. No doubt the nervous disturbances produced by teeth-cutting will make a child more susceptible to the ill-effects of heat or cold, but he can hardly see how it is the direct cause of disease. Moreover, both enterocolitis and bronchitis can be cured while dentition is still in progress. Are there not some coincident changes going on in the digestive tract to prepare it for its future work, to which these disorders may be referred as well as to dentition?

DR. S. S. ADAMS said it was difficult to determine where physiology leaves off and pathology begins. The health reports are not accurate. Dr. Cook says sixty-six cases died during 1885 from dentition, and that this is eleven per cent of the deaths in children under one year from all causes. Surely all the children cut teeth, and if dentition were a pathological process, more ought to die. Dr. Harrison has described the nerve-supply of the buccal cavity, and has shown the route of the reflex disturbances. Why should they always take this course to the intestinal tract and not attack other ganglia?

Teething and diarrhea are associated in the minds of the laity. The eruption of the teeth is the signal to begin feeding with solid or semi-solid food, which is inappropriate at that period. He has never seen a case of diarrhea where dietary rules have been observed until the appearance of the molars. The incisors, strange to say, do not create such disturbance during their eruption.

The case cited by Dr. Cook was clearly one of improper feeding. If all these disturbances are due to dentition, why are they not produced by the second dentition or by toothache? If dentition is a cause of eclampsia, what causes the eclampsia, as it is not a disease but a symptom? Why does not aphthous stomatitis produce these symptoms also—it must irritate the fifth nerve?

Generally a purge is more necessary than lancing the gums.

DR. HARRISON explained that it was the irritation of the terminal filaments of the nerves of the gums, and not of the cheeks, to which he had referred.

DR. ADAMS thought that inflammation in the mouth, as in aphthous stomatitis, would irritate the same nerves as the advancing teeth.

DR. ACKER had a patient, born fifteen months ago, who had had the most severe symptoms usually ascribed to dentition. As soon as the lateral incisors came through, all symptoms ceased. In a similar case, now under treatment, he can also trace the cause to the eruption of the teeth. Bronchitis has been associated in these and almost all his cases. The only treatment had been with antispasmodics.

DR. FERNALD, in his experience in the dispensary service, among the colored at least, had heard of but two causes for disease—worms and teething. He thought improper food the cause of most of the troubles about teething time.

DR. KING was in doubt as to whether dentition was the cause of as many diseases as have been ascribed to it. His personal explanation is that disease is concomitant with dentition. All the organs of the body are continually undergoing structural changes, whether physiological evolution, as in childhood, senile degeneration, or involution, or reconstruction, as adapting organs to peculiar circumstances, and at all times they are liable to be affected

by the slightest changes in temperature. The process of dentition being physiological should be latent, but is stirred up by external causes, as heat and cold. The teeth are undergoing evolution preparatory to use, and the other organs must be undergoing corresponding changes. A physiological process may be converted into a pathological one by circumstances.

DR. COOK was pleased to find so many gentlemen agreeing with him. He was aware that Dr. Harrison was an enthusiastic believer in the "germ theory of disease," but he did not imagine he would carry it to the extreme of charging the *germs of the teeth* with being the cause of disease. Ambrose Paré had a celebrated case in the son of the Duke of Nevers. The child died without a satisfactory diagnosis having been made. At the autopsy, no organ was found to be diseased; the gums, however, were swollen, and upon their being laid open, the teeth were found ready for eruption, hence it was proclaimed that the child died of teething. The same rule is frequently applied nowadays.

To say that there will be trouble at the dentition period is like forecasting the weather by the changes of the moon.

The diversity of opinion upon the subject of dentition as a cause of disease is shown, when we find that one author says the sharp teeth produce the most irritation, while another says the blunt ones do so. He thought that it might be well to lance the gums to relieve tension when there is gingivitis, *not* to release the "imprisoned tooth."

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, February 17th, 1887.

PHILIP ADOLPHUS, M.D., *in the Chair.*

DR. HENRY T. BYFORD made the following remarks on

THE SLIPPERY-ELM TENT.

For quite a number of years, I have been using slippery-elm tents in the treatment of uterine disease. By compression, their dilating power is increased so as to render them useful as a substitute for tupelo, sea-tangle, and compressed sponge in many cases.

The characteristic of slippery-elm bark is that, upon being moistened, a slippery substance exudes, which acts both as a lubricant to the tent and as a protection to the mucous membrane against that injury or abrasion which sometimes follows the use of dilators of this class. Another advantage is the rapidity of its action. The tents expand sufficiently within an hour or two for the introduction of a larger size, or two or three of the same size. This may be repeated until the desired dilatation is obtained, and since the

expanded tents are both soft and slimy, with a minimum amount of injury to the parts.

A small elm tent may be introduced at the office and left for twelve or twenty-four hours and thus serve, providing it be used once or twice a week, as a mild substitute for the intrauterine stem in cases of sterility. The patient can go home and keep quiet until she removes it by the attached string, upon the advent of severe pain, or at the end of the twenty-four hours. A glycerin tampon placed under the cervix is necessary in such cases to retain it in place.

These tents are also available as applicators, for the exuding slime carries the drug out from them instead of into them, gradually dilutes it, and thus limits its action.

As dilators and applicators in vaginitis, vaginismus, urethritis, urethral stricture, etc., they are also useful, and may be ordered of any size, shape, or curve desirable.

They should be kept in a tightly covered box or bottle, as they become brittle and lose their rapid expansive power when they get too dry. It would be a good thing to dip them in gelatin or cocoa butter when they are to be preserved for a long time.

DR. A. REEVES JACKSON.—I have used slippery-elm tents a great many years, and I have no doubt that the form in which they are now presented by Dr. Byford will render them more suitable for dilating purposes than heretofore. In this form, however, I have made use of them recently, and have been disappointed as regards their dilating power. Slippery elm forms a slimy mass at the expense of its substance, and while this mucilaginous mass and the mucous discharge which appears with it causes the tent to seem large, the latter does not exert much dilating power, and I was surprised to find that after moistening one of these compressed tents for several hours in water, it was very little larger than before. I have had a great deal of satisfaction in using flat pieces whittled out of the slippery elm bark, in the following manner: I use a small sponge tent, and in order to get the expansive power of that material surround it with a cordon of these slips, so as to protect the mucous membrane from injury. I think that in the combination of sponge tent and slippery elm we have the best means for tent dilatation. In this way we get the dilating power of the sponge with the protective effect of the slippery elm.

In cases in which stenosis seems to be the cause of sterility, I use non-expansive stem pessaries. My experience in the use of the intrauterine stem has been very large, and I find, in order to effect any change of structure, that it is usually necessary to carry out the treatment for many months. I have never succeeded in changing materially and permanently the direction of the cervical canal in less than six or eight weeks, and sometimes over a year has been required. The stem may remain undisturbed for many months. This makes a great difference to the patient, who otherwise is obliged to have the instrument changed frequently. I use chiefly a very flexible soft-rubber stem, which may be introduced and worn for months without irritation. It may be of different degrees of flexibility, a very small one at first and of very

slight straightening power, and by-and-by another, larger and stiffer, and so on until at the end of some weeks or months the desired change is produced. I think the use of a substance that is not absorbent and does not dilate superior in these cases.

DR. H. T. BYFORD.—I have had many cases of sterility of several years' standing, dating from marriage, cured by three or four or more small tents used once or twice a week. Their power is milder than that of compressed sponge, and less radical than that of the intrauterine stem pessary. These negative qualities are the accompaniments of nearly all safe remedies. If Dr. Jackson had watched the compressed elm tent, which seemed to expand so little in several hours, he would have found that it expanded two or three times its own diameter in less than two hours, and then became smaller again by having its softer portion dissolved out. In the uterus its substance is not washed away as rapidly as in a basin.

DR. W. W. JAGGARD exhibited a

PLACENTA WITH MARGINAL INSERTION OF AN ABSOLUTELY SHORT UMBILICAL CORD, MEASURING NINE INCHES IN LENGTH.

The specimen, placed at his disposal by Dr. Charles Caldwell, was of interest in connection with Dr. John Bartlett's paper, read at the January meeting. The absolute shortness of the cord in Dr. Caldwell's case did not constitute a mechanical hindrance to the progress of labor, although there was some slight difficulty in ligaturing the organ, after birth of the child, on account of the proximity of the navel of the child to the vulvar orifice of the mother.

THE ANTISEPTIC OBSTETRICAL PADS OF DR. H. J. GARRIGUES AND DR. WM. L. RICHARDSON.

Dr. H. J. Garrigues describes the application of the pad in the following words: The well-closed vulva is covered with a pad of absorbent cotton, wrung out in the solution (1 in 2,000). Outside of that comes a piece of oiled silk or preferably thick gutta-percha tissue dipped in the solution. To keep this antiseptic part of the dressing in place, I use a large pad of dry absorbent cotton, and a rectangular piece of cotton flannel or a square piece of unbleached muslin, half a yard in both directions, and folded diagonally like a cravat. Dr. Wm. L. Richardson substitutes absorbent scrap or waste done up in cheese-cloth for the absorbent cotton. Of course, Dr. Richardson does not insist upon the pad as essential. There is nothing peculiar about the pad except that it seems to me to be a very convenient and safe form of dressing to use. The main thing is the use of antiseptics all through the delivery, and the pad is all that is needed for the convalescence.

The important services rendered to the profession and community in the prophylaxis of childbed fever, by Garrigues and Richardson, demand recognition. In the New York Maternity Hospital the mortality from sepsis—Oct. 1st, 1882, to Oct. 1st, 1883, 429 patients—was 6.06 per centum. Garrigues has reduced

this mortality to—Oct. 1st, 1885, to Oct. 1st, 1886, 463 patients—.21 per centum.

In the Boston Lying-In Hospital, the mortality from sepsis, Jan. 1st, 1882, to Dec. 31st, 1882, 288 patients, was 5.55 per centum. Richardson has reduced this mortality to—Jan. 1st, 1886, to Dec. 31st, 1886, 373 cases,—.0 per centum.

The American woman insists upon wearing some sort of a napkin to absorb the lochia. If she wear one at all, it must be antiseptic.

DR. A. REEVES JACKSON exhibited two

DERMOID CYSTS OF THE OVARY.

In the first case the patient died, no diagnosis having been made, a "metaphysician" or "Christian scientist" having told the patient that "the mind only was at fault." The autopsy revealed a ruptured dermoid cyst, the peritoneal cavity containing about a quart of pus, and bearing evidences of acute inflammation. The cyst contained hair, teeth, and plates of bone.

In the second case, the diagnosis of cystic tumor was made, laparotomy was done, and a tumor weighing eight pounds was removed. There was a main cyst, containing a limpid serum, and inside of this a smaller cyst about the size of a mandarin orange, containing bone and hair, part of which was straight and part curly, and of a different color. Patient recovered.

DR. CHRISTIAN FENGER made the following remarks on

DERMOID CYSTS OF THE OVARY.

with illustrations from specimens :

In entering upon the question of the dermoid cysts of the ovary, I wish to call attention to the two theories of their origin. According to Heschl, dermoid cysts in general owe their origin to isolated islands of the epiblast, displaced during embryonal development and located somewhere in the territory of the mesoblast. This theory of fetal inclusion did not explain the origin of the dermoid cysts in the testicle and ovaries. It was not until His had shown that the internal genital organs are developed from a part of the embryo, the so-called "axenstrang," in which all the germinal layers are included, that we were able to understand the presence of dermoid cysts in those genital glands.

The second theory of the origin of dermoid cysts in the ovary is the view of the older authors, recently adopted by Waldeyer. Epithelial cells of the ovary, capable of transformation into the ovum with all its formative possibilities, may enter into an irregular formative activity and produce a dermoid cyst—a process almost analogous to a partheno-genetic development, as Olshausen states it. This second theory would only explain the origin of dermoid cysts in the ovary, and would not enable us to understand their presence in all other parts of the body. Consequently,

it seems more natural to accept the Heschl-His theory, as this gives a satisfactory explanation of the origin of dermoid cysts in general, and is in conformity with Cohnheim's theory of the origin of all other new formations, from an isolated group of embryonal cells, dormant until the unknown cause of the new formation calls them into formative activity.

A dermoid cyst is always a monocyst, and if, as is seldom the case, we find more than one in the same ovary (Olshausen in one case found three), we may expect to have had more than one embryonal matrix, from each of which a cyst has developed, the one independent of the other. It often appears as if a dermoid cyst of the ovary were a multiple one, but closer examination will prove that we have before us a combination of a dermoid cyst and a proliferating cystoma, or more rarely a dermoid cyst with multiple local colloid degeneration of the stroma of the wall. Cystic transformation of the sweat glands—extensive cysts to the size of a fist—was seen in one case by Friedländer.

I shall not go any further into the subject of the dermoid cysts here, but only present to the Society three specimens removed by laparotomy within the past year, and will call attention to the points of interest illustrated by each one in particular.

Case 1.—This specimen, at the time of the operation the size of a fist, now much smaller from shrinking in the alcohol, was removed from a girl of 20. There was no difficulty about the removal, but I am sorry to say that the patient died from acute sepsis thirty-six hours after the operation. Besides the sebaceous matter and the hairs, which you have already seen in Dr. Jackson's specimens, we find in dermoid cysts very commonly—in from twenty to fifty per cent of the cases—teeth inserted in the soft dermoid wall or in pieces of bone contained in the latter, or finally, free in the contents of the sac. As a rule, there are only a few teeth in a cyst; but Schnabel has seen, in a case of a girl of 13, over one hundred; and Autenrieth describes a case in a 22-year-old woman in which three hundred teeth were removed and as many more left in the cyst. As Olshausen states, it is impossible to understand the presence of such numbers of teeth without the explanation that, the same as in children, multiplication of the enamel germ takes place and a set of milk teeth are followed by a set of permanent ones. That this is more than a mere theory is proved by a specimen in Rokitsansky's collection in Vienna, in which there is seen a milk tooth with the root absorbed down to the crown by atrophy from pressure of the overlying permanent tooth. Spencer Wells, in his "Ovarian Tumors," states that he has seen one similar instance. In the specimen before us this fact is illustrated to perfection. From the soft parts on the surface of this little piece of bone, in the wall of the cyst, you see attached a tooth corresponding in shape and size exactly to a temporary incisor of the

upper jaw. I have made an incision through the gum, if we may use that expression, and, as you see, the root is absorbed almost down to the crown. When we turn this milk tooth to the side, we see the crown of the overlying tooth. This is larger, and has the exact shape of the corresponding permanent incisor.

Case 2.—The next specimen is a very large dermoid cyst, from the left ovary of a woman of 50. It filled the whole abdominal cavity up into the cardia and gave the exact symptoms of a proliferating cystoma or multiple cyst, as there were felt, besides the main cavity, harder, lobulated portions, which I supposed to be smaller and more tense cysts. As she gave the history of a cyst which ruptured when she was 14 years old, and caused several months of suffering from peritoneal symptoms and then disappeared, not to return until after the age of 45, I thought that a dermoid cyst was out of the question. At the operation, which was difficult on account of many adhesions and the nature of the contents of the cyst, I found this very large dermoid cyst, containing—(a) Three or four gallons of a brownish fluid, in which floated hundreds of thousands of round, yellowish-white small bodies, the size of a hemp-seed up to a pea. I pass round a sample of them in these two glasses. These bodies are soft, have the consistency of butter, and are found under the microscope to consist of irregular masses of amorphous fat, with pavement epithelial cells interspersed here and there, single or in groups.

(b) A yellowish-white, butter-like mass, the same as the small bodies if matted together, filling up entirely some of the chambers of the cyst, with no fluid mixed with it. This peculiar arrangement of the fat is rare. Rokitsansky saw in a cyst seventy bodies the size of a hazel-nut and very many the size of a pea floating in a brownish fluid. Routh, according to Spencer Wells, saw a similar case, the balls showing under the microscope concentric layers of amorphous fat around a nucleus of cholesterol crystals. Franckel, cited by Olshausen, found the whole contents of a dermoid cyst to be numerous hard, mostly round or irregular balls, consisting of amorphous fat, fatty degenerated epithelial cells, and hairs. The shape of the cyst is peculiar, inasmuch as it gives the appearance of a conglomeration of cysts. But close inspection shows that all of these communicate with each other so as to form one large though very irregular cavity. Thus in reality we have before us a monocyst, characteristic of the dermoids, as I mentioned before. In the wall, however, we find a number of smaller cysts the size of a pea to a hazel-nut—these do not contain the same fatty material as the main cyst, but a colloid mass, and are due to secondary colloid degeneration in the wall of the latter. The inner surface of the large dermoid cyst shows in some places irregular masses of bone imbedded in the wall, and further, as in Dr. Jackson's cases, the following condition: We do not find typical skin with hair, sebaceous

glands, epidermis, and so on everywhere on the inside. This is found only on part of it, forming one or several irregular islands. The remainder of the cyst-wall is smooth, has the characteristics of an ordinary cystoma, with a single layer of epithelial, cuboid, or cylindrical cells. It may be that the dermoid portion of the wall secretes the fat and the cystoid portion mainly a serous or albuminous fluid. Movements of a cyst containing at the same time a thin serous fluid and sebaceous matter might (Rokitansky) shape this suspended fat into the small round masses just the same as butter when in the process of churning. However, if this was the right explanation, it appears that this peculiar formation is seen only in very exceptional cases. The right ovary was transformed into a dermoid cyst the size of an orange. Notwithstanding the dermoid cysts on both sides, the woman had a number of children, the youngest 16 years old at the time of the operation. The patient never rallied from the shock of the operation, and died twelve hours afterward.

Case 3.—The third specimen is a dermoid cyst taken from a girl of 23. It was noticed for about one year and a half before the operation, at which time it was one and a half times as large as a child's head. There was no particular difficulty about getting it out. When I opened the abdomen and came on the cyst it was transparent, so that I did not think it was a dermoid cyst, and inserted a Köberle's trocar, which, of course, we should never do in dermoid cysts if we can help it. Immediately the trocar was stopped up by what I found later was a mass of hairs and sebaceous matter, so that I had some difficulty in keeping the abdominal cavity clean. However, she recovered without any greater trouble than a little abscess in the abdominal wall from one of the sutures.

Before demonstrating the specimen I wish to make a few remarks in regard to malignancy of dermoid cysts. As a rule, we regard a dermoid cyst as a benignant new-formation, and a malignant character is here a rather rare exception. We make a distinction between malignancy of a dermoid cyst, *per se*, and malignancy from a combination of dermoid cysts with carcinoma or sarcoma. The malignancy of a dermoid cyst as such is very rarely seen. Kolaczek relates a case, operated upon by Martini, in which, besides a common dermoid cyst with perfectly smooth surface, there were found in the walls of the peritoneal cavity small nodules in great number, the size of a millet-seed and of a yellowish color. Many of these little tumors had a light-colored hair sticking out from their centres into the peritoneal cavity. Similar bodies were seen in a case operated upon by Billroth, reported by Fraenkel.

Malignancy of a dermoid cyst from combination with carcinoma, sarcoma, and myoma. These tumors originating in the tissues of the cyst are not so very seldom met with, and have been

observed more commonly of late years because a more minute microscopical examination is made now than in former years. Olshausen mentions as bearing upon this subject a statement of Doran, that he had seen in several instances malignant tumors of the abdominal cavity follow extirpation of dermoid cysts. On examining the main wall of the specimen before us, we find on the dermoid island, with its hairs and a plate of bone in the wall, the following unusual formations:

(a) A large black mole. It is of irregular lobulated shape, two by three inches in diameter, slightly elevated over the surrounding skin, and has a velvety uneven surface without hairs. Microscopic examination shows the common structure of pigmented moles, which, as you will remember, has a great similarity to that of a sarcoma.

(b) A papilloma the size of a pea. You will see it outside of the mole on the skin over the bony mass. It is surrounded by a thick wrinkled skin, beset with hairs. On transverse section it shows a solid centre covered with the pointed excrescences resembling exactly a large wart with long papillæ, as we sometimes find them on the skin of the hand. A detailed microscopic examination and description of all the specimens is not as yet finished, but I intend to give it in a future discussion. It is sufficient, however, here to call attention to the important bearing the two benignant new formations found in this cyst have upon the malignancy just spoken of. It is well known that moles often furnish the soil for sarcomas, and that warts and papillomas, for years benignant, sometimes all of a sudden commence to grow because they are transformed into a carcinoma or a sarcoma. The rapidity with which a dermoid cyst sometimes will grow involves a great nutritive hyperactivity. I can understand that this, in its turbulent way of forming tissues without an etiological object, could cause the physiological resistance to disappear and thus open up the gates for malignant tumors.

A. REEVES JACKSON read the following paper, entitled:

VAGINAL PRESSURE IN THE TREATMENT OF CHRONIC PELVIC DISEASE.

The brief paper which I have to present this evening was suggested by some remarks, with which the Society was favored at its last meeting by Dr. Etheridge, entitled a "Preliminary Note on Antiseptic Tamponnement of the Vagina in the Treatment of Pelvic Inflammation."

It would have afforded me pleasure to indorse the treatment which was advocated at that time had an opportunity been given for so doing, for I have had occasion to make frequent use of it, and to learn its advantages, during the past eight or nine years.

My attention was first called to this subject by reading a paper which was published by Dr. V. H. Taliaferro, of Atlanta, Ga., in

1878, on "The Application of Pressure in Diseases of the Uterus, in which the writer presented many facts and arguments to prove the great therapeutic efficacy of the principle of pressure as applied to the treatment of diseases of the uterus and other pelvic organs, which are characterized by habitual passive congestion and its results, namely, uterine displacements, enlargement, relaxation, cervical erosions, menstrual disorders, etc.

The method consisted in firmly packing the vagina with sheep-wool made antiseptic with carbolic acid, with the aid of a Sims' speculum, the patient being in the knee-chest posture.

At first, Dr. Taliaferro used cotton pledgets saturated with glycerin, but observing that the cotton packed quite hard, he very soon substituted wool because of its resiliency, a quality which it was found to retain under pressure and moisture.

In illustration of the results of this method of treatment, he detailed a number of instructive cases in which it had been used by him.

In one of these, the patient was suffering from supravaginal elongation of the uterine cervix, complicated with complete cystocele and vaginal eversion, the involuted parts protruding from the vulva and forming a tumor of considerable size. The uterine canal measured six inches. The parts were restored and the vagina packed with cotton, a process which was repeated every two or three days for a fortnight, at the end of which time the depth of the uterus was reduced to three inches. Other symptoms were correspondingly improved. The patient, who had been only able to drag herself along with pain and difficulty, could, after the first packing, move with rapidity and comfort.

She was subsequently cured by a plastic operation on the vagina.

A number of other cases, some of them furnishing results almost equally striking, were detailed by the writer.

Dr. T. strongly emphasizes the importance of applying the tampon with the patient in Sims' position, in order that the vaginal canal should be distended and elongated to its utmost capacity. He further advised that the first few pieces composing the tampon should be of cotton, for the reason that a greater amount of glycerin may be incorporated with that substance than with wool. It was claimed that the therapeutic effects of this treatment are as follows:

1. It diminishes blood supply and nutrition.
2. It promotes absorption.
3. It removes hyperplastic tissue by retrograde metamorphosis.
4. It diminishes nervous action.
5. It rectifies malpositions.

I was much impressed by the stated results of the treatment and determined to give it a trial. It seemed to promise a valuable substitute in some of the objectionable and uncertain methods

of local treatment then and now in vogue, such as cauterization, local blood-letting, tents, intrauterine medication, iodine painting, hot douches, etc.

Since then I have used it in many cases of chronic pelvic disease, and am able to corroborate the favorable statements that have been made concerning its efficacy.

Dr. P. F. Mundé, who gives an abstract of Dr. Taliaferro's paper in his "Minor Surgical Gynecology," edition of 1885, says: "Of the value of this steady elastic pressure and support in reducing the size of an engorged hyperplastic or (better still) subinvolted uterus, and restoring the normal circulation to the edematous and congested pelvic cellular tissue, I have no doubt whatever; neither of the potent alterative effect of this pressure on old peritonic or cellulitic exudations and adhesions."

I had not applied this dressing many times before I observed occasionally on removing the tampon that on various parts of the vaginal wall, and also around the os uteri, erosions appeared, sometimes bleeding slightly on exposure. I attributed this to the fact that the packing had either been too firmly or unequally placed.

In cases of moderate laceration of the cervix uteri, this accident is especially likely to occur if the packing is so applied about the vaginal portion in such a manner as to widely open the os uteri. Hence, in all such cases I endeavor to at first push the uterus upward with a single pledget, and then to pack the entire vaginal fornix about it so as to press the cervical labia together as much as possible.

When any part of the mucous membrane appears soft and succulent, I have found advantage in combining with the glycerin a solution of tannin or alum.

The contact of glycerin is not equally well borne by all vaginas, and in a few cases I have not been able to persist in its use on account of the irritation it caused. In these cases I find an excellent substitute in vaseline, which, although it does not produce the peculiar serous drain which comes with the use of glycerin, is unirritating, and makes possible the employment of the pressure, which is the more important element in the treatment.

When I first began to use this pressure treatment, I chose carded wool, in accordance with the suggestion of Dr. Taliaferro. But it was difficult to obtain a well prepared article, and next to impossible to incorporate any considerable quantity of glycerin with it. I was obliged to use cotton for the upper part of the vagina. I next tried successively oakum and jute.

These substances were elastic—especially the former—and also antiseptic; the former containing tar, and the latter carbolic acid. However, since sheep's wool has been so prepared as to be free from fatty matter, and is comparatively absorbent of water and glycerin, it more completely and perfectly meets the indications than any of the other substances I have named.

As regards the form of the tampon, I have used it both in single and multiple pieces, and unhesitatingly give preference to the latter in many cases. It is very important that the vagina be packed in such a way as to insure an equable pressure against every part. This cannot be so certainly done with a tampon made from a single piece, or a few large ones, as with a number of smaller sizes. When moistened, the pieces should not exceed a walnut in size. Time may be saved, however, and the object accomplished, by using a single piece of wool for the lower half of the vagina.

Commonly, the only medication I have used with the tampon, besides the glycerin or vaseline, has been the occasional addition of tannin or alum. But when, for any reason, I have wished to have the dressing remain longer than two days, I have, after saturating the separate pledgets, rolled them in boracic acid so as to take up two or three drams of the latter.

The cases in which I have found this method of treatment especially beneficial are those which are characterized by soft engorgement—such as the earlier stages of subinvolution, with or without cervical laceration. In these cases I have seen more marked change effected in two weeks than is commonly seen in two months—or more than is seen at all sometimes—under the use of hot-water douches, however perfectly and assiduously the latter may be used.

Permit a slight digression. Without wishing to disparage in the least the use of hot-water irrigations in the treatment of chronic pelvic inflammations, I desire to say that for some years I have held the opinion that their efficacy, great as it is, has been overrated. Indeed, they have been so eulogized that perhaps we have expected more from them than was reasonable. One serious drawback to their usefulness arises from the fact that the sittings cannot be continued usually for a sufficiently long time. If it were practicable to keep a stream of hot water playing against an inflamed or engorged tissue for thirty hours rather than thirty minutes, we should doubtless obtain more prompt and more permanent results. But as the hot-water douche is usually employed its effects in constricting the over-full vessels are of short duration. I have seen a turgid, purplish cervix subjected to a hot stream for forty minutes; at the end of the time it was pale and shrunk; at the end of another hour, the patient continuing meanwhile on her back, I have found the same cervix as turgid and as purple as before.

Now, just on this account, a manifest and very great advantage may be urged in favor of a means of treatment which, equally with the hot-water douche, has power to unload the vessels of their stagnant contents, and which may be continued day after day and week after week, without remission and without reaction. Such a means is, I believe, to be found in this persistent and pelvic pressure and tissue drainage.

Were it needful, I could cite many cases illustrative of the beneficial effects of this treatment, but will content myself with but two.

Case I.—A married woman, 34 years of age, had two children at term, and subsequently a miscarriage at the fifth month. After this latter event, menstruation became more profuse and the periods were protracted. At the end of two years her general health was greatly impaired and she was markedly anemic. Ordinary remedies were used without success. At my suggestion, her physician curetted the interior of the uterus, and then swabbed the cavity with Churchill's solution of iodine. Febrile symptoms followed and lasted a week. Temporarily there was improvement as regarded the hemorrhage; but in three months she was worse than before, and rarely free from a bloody discharge. It was then determined that I should repeat the curetting. Remembering the inflammatory sequel to the previous operation, I was moved to pack the vagina a few times as a preparatory measure. She was flowing when the first packing was placed. When the latter was removed at the end of forty-eight hours, the only appearance of blood was a slight staining of that portion of the tampon which had been placed against the os uteri. Another tampon larger than the first, was placed, carrying the uterus as high as possible in the pelvis. On its removal two days later no blood at all was perceptible. This treatment was continued three weeks, combined with suitable medicinal and hygienic means, with the result of permanently stopping the hemorrhage, and the ultimate restoration of the patient's health.

Dr. Mundé, in speaking of this means of treatment in connection with another class of cases, uses these words: "When the retro-displaced fundus uteri is adherent, these daily emollient and hydragogue tampons may in time, by their combined pressure and alterative action, bring about the absorption, or at least stretching, of the adhesion, and permit a replacement of the organ." I submit a case in point.

Mrs. J., aged 24 years, had several induced abortions; no child at term. Had been treated for displacement by pessary with apparent benefit. After a time the symptoms returned, and the physician introduced a larger instrument. It caused pain at once, and in a few hours there was a chill and then rise of temperature. I saw the patient next day, and advised the removal of the instrument, which was taken away. It was a very large one. A sharp attack of inflammation ran its course in ten days. No abscess formed. A few weeks later, I found the uterus retroverted and the fundus immovably fixed by adhesions in its malposition. At the request of the attending physician, I then took charge of the patient. The treatment consisted wholly in the use of tampons of cotton with glycerin and boracic acid. The pledgets were small at first, and were placed in the posterior vaginal fornix, pressed into position with as much force as the patient could

readily bear. The pledgets were increased in size, and others were placed in front of the cervix. The vagina was packed below more and more fully and firmly each time with wool, until the canal was distended to its utmost capacity. At first the dressing was renewed daily, then every two days. At the end of two months, the uterus was thoroughly replaceable, all tenderness had disappeared, and no evidence remained of the former presence of adhesions.

DR. PHILIP ADOLPHUS.—In the treatment of chronic pelvic disease by vaginal pressure, we may avail ourselves of the two methods of massage and columning the vagina. The latter has a much wider range in the treatment of pelvic disease than massage.

These methods have been hitherto applied to the removal of congestions, exudates, and recent slight adhesions of the serous tissues in the pelvis, which were within reach of the vaginal pressure.

We had often thought that we had succeeded in removing by them old adhesions and bands, when merely recent effusions surrounding old deposits had become absorbed, just as nature will, without our aid, absorb a large pelvic effusion in a recent pelvic inflammation.

Neither method, however, can cause the removal of old cicatricial bands, firm adhesions, and imbedded organs; and both are contraindicated when inflammation of the serous tissues exists.

But where dilatation and congestion are present, and comparatively recent adventitious and hyperplastic tissues are to be removed, the stimulant and alterative influence of pressure on the pelvic vessels induces absorption by either of these methods.

The treatment by massage will not, in future, be resorted to as often as formerly; for it is inefficient in its methods, dangerous in its tendency, as well as troublesome and indelicate to the physician and patient.

The sole object of massage is to induce sufficient irritation in order to affect absorption. But the tamponnement of the vagina does much more than massage.

It supports and relaxes tense ligaments, elevates the movable or adherent vagina, bladder, uterus, and ovaries, provided they are not adherent to the pelvic walls; depletes congested, inflamed, and subinvolted organs; overcomes spasm and irritation, and induces physiological rest in the parts.

Tamponnement per vaginam is therefore indicated in all cases where pelvic tenderness is present which is not due to an acute attack, or where absorption is needed; it is efficient in cases of malposition and prolapse of the uterus, ovaries, ligaments, and vagina, where elevation of the organs and mechanical support are required, preparatory to the use of pessaries, or where these cannot be borne.

Columning the vagina is effected in the knee-elbow position by means of Sims' or Simon's speculum. A large pinch of iodoform, boric acid, or salicylic acid is first applied to the cervix, a few tampons saturated with glycerin are laid in the vault of the vagina, and then ordinary cotton wool, absorbent wool, or iodoform gauze is systematically packed into the vagina, to remain there three or four days. This packing is to be renewed until the effects are produced which the practitioner desires. The patient is not obliged to remain in bed, and the pelvic, sacral, and hypo-

gastric pains, together with urethral irritability, are frequently relieved in a short time by this method, which is altogether a more successful, cleanly, and decent mode of procedure than that of massage.

DR. JAMES H. ETHERIDGE.—I have nothing additional to say except that the continued use of this method in many selected cases has produced most desirable results. But I would protest most emphatically against being understood as recommending it for every trouble of a pelvic nature. For the class of cases Dr. Jackson has enumerated, I think it a vastly superior treatment. I was much impressed with the article of Dr. Taliaferro. He tampons the uterus cavity, with the patient in the genu-pectoral position, using a speculum of his own device, which is flanged at the lower end so as to separate the posterior portion of the vaginal orifice, the cervix being held steadily down by the vulsellum, and with a long toothed forceps he pushes the cotton into the uterine cavity. The true explanation of the benefit which comes from this treatment is, that by elevating the uterus the pressure from its great weight is relieved. There is a mechanical obstruction to the return of blood from the uterus, and what is done by the tampon is to push up the uterus and permit its decongestion, and along with that comes the improved nutrition of the organ, and the reflex symptoms in the way of pain, menstrual disturbances, and the like readily disappear. I cannot tell exactly how I was put upon this method of treatment: I don't claim it as anything new. Several years ago, Dr. Bozeman, of New York, tamponed the vagina, calling it "columning the vagina." He spoke of several cases of positive elongation of the posterior wall of the vagina with this continual pressure. His paper was published in full in the transactions of the American Gynecological Society.

DR. H. T. BYFORD.—I agree with Dr. Etheridge, that any pressure that can be made by the vaginal pack could not cause the relief. The benefit of pressure upon enlarged veins in any part of the body, as in the leg or testicle, is only temporary unless some other curative influence be added. Nor do I think that a low position of the uterus causes the venous stasis, for this is not found in all cases, and often is found when the uterus is held high up by contracted and indurated sacro-uterine ligaments. The veins are large, long, and tortuous, and are made to admit of considerable change in position of the uterus in almost any direction. The rapid improvement comes from the support to the uterus, and sometimes also to the ovaries, taking away the traction upon inflamed and indurated ligaments, and thus promoting the absorption of exudations that either diminish the calibre of the veins or prevent them from accommodating themselves to the position of the uterus and its adnexa. This relief of strain and promotion of absorption in the pelvic tissues is the great remedy for subinvolution in the subacute stage, the same as rest in bed is the remedy in its acute stage, viz., soon after labor. It is in the subacute stage of pelvic disease that the vaginal pack finds its great sphere of usefulness. Dr. Jackson's second case serves as a good illustration. When the inflammation and induration are in the sacro-uterine ligaments, two or three soft glycerin tampons, made of the best ordinary cotton batting (not the absorbent), placed under and in front of the cervix every second day at the office, and left till the next night, will often relieve the traction and bring about rapid improvement. When it becomes neces-

sary to apply the complete pack, we will get the best effects by so placing the cotton and cotton wool as to relieve the traction upon tender parts, which should be found beforehand by a careful diagnosis.

DR. JACKSON.—I think the subject has been very thoroughly discussed, and the principle of the treatment clearly illustrated. The important fact is, that it is not a difficult method of treatment: that it is efficacious there can be no doubt, the clinical facts justify this assertion. The method pursued by Dr. Bozeman seems to me to be peculiarly objectionable. Strapping a woman on to a machine for the purpose of packing the vagina seems both irksome and unnecessary. I am very glad there is such unanimity of opinion in regard to the clinical efficacy of this method of treatment.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of February 10th, 1887.

The President, DR. GUSTAV ZINKE, in the Chair.

THE PRESIDENT delivered his inaugural address as follows:

A PLEA FOR THE TEACHING OF PRACTICAL MIDWIFERY AND THE EDUCATION OF MIDWIVES.

Hundreds of newly graduated physicians are sent from our colleges annually who have not had the opportunity (nor is it required of them) to attend one or more women in confinement. They may have witnessed one or two labor cases in an amphitheatre: but what is that compared with the personal delivery, under the direction of an experienced accoucheur of several women? At the present day, with the facilities we possess, there is no consistent reason why a medical graduate should not be required to have attended several confinement cases before admission to the practice of medicine. Schools for practical obstetrics are an acknowledged necessity abroad. In this country we can no longer do without them.

We also know that every year many hundreds, if not thousands of women are waited upon during labor and confinement by ignorant, officious, dirty, and careless midwives. Here, also, is ample room for improvement and reform.

About four years ago, I made an unsuccessful attempt to establish a school for the education of midwives. I say unsuccessful, for the reason that the material necessary for practical demonstration was insufficient, and because quite a number of prominent physicians of this city strenuously opposed my effort, simply because they did not believe in midwives. Had it not been for the scantiness of such labor cases as are required for teaching, I might have been able to prove to my opponents the value of

good midwives, as well as the advantage that a good school of midwifery possesses.

Who will deny that every year many lives are sacrificed, homes robbed of their mothers, and parents of their offspring, simply for the want of opportunity in the training of young physicians and midwives in the art of obstetrics?

Students may learn a great deal from didactic lectures and text-books, but, notwithstanding good teachers, excellent books, and diligent application, without practical experience in the "chambre d'accouchement" they will be awkward, embarrassed, and prone to commit errors, the responsibility of which rests solely with imperfect education in this very important department of medical training. Theoretic education will not prepare a student to meet the emergencies often arising unexpectedly, immediately before, during or after labor. Negligence in study may be a fault in young doctors or midwives, but teaching [however thorough and brilliant the instructor may be] cannot be perfect without actual demonstration in a considerable number of labor cases.

At the present time, and in a city like ours, no apology can be made for the non-existence of an institution where students and midwives can be brought in actual contact with obstetrical cases.

I would not be understood as desiring to cast reflection upon, nor attacking the gentlemen who have the power, influence, and opportunity to create such schools. My only object is to point out to them that the time is at hand when they must spend their every effort in thought and action in this direction, and to appeal to them to use their influence to the utmost, and not rest until the obstetric wards of our otherwise commodious and beautiful city hospital are thrown open to all students, male and female, who are desirous to study midwifery.

I am informed that there is an average, in that institution, of about thirty deliveries per month. These cases are there at the expense of the city. What return do they make for the services they receive, for the food they eat, for the clothes they wear? None. And so far as these cases are concerned, only a favored few have an opportunity to profit practically by this gratuitous material; these are the internes and a small number of students who, perchance, hear of the opportunity of a private course given whilst the schools of medicine are not in regular session. And even in these courses, limited to five or six students, no opportunity is afforded these gentlemen to attend a woman in actual labor. They are nothing but so-called "touch courses," and they seldom, if ever, either see or deliver personally a single patient. It is said that, by admitting students to these cases, the lives of these women are placed in jeopardy because the student's clothes are saturated with the atmosphere of the dissecting room. Then the authorities of the hospital seem to have proof which conclusively shows that the gentlemen giving these private instructions

have had to mourn the loss of more cases from "puerperal fever" than those who abstained from so doing during their services at the institution. This may be so. I cannot deny it. Yet I venture to assert that, with the proper antiseptic precautions on the part of the student and teacher, as well as those in behalf of the patient, there need be no danger of infection from that source. Students who dissect should not be admitted to these cases, and those who are admitted, though not dissecting at the time, should be compelled to change their clothes, and go through a process of personal antiseptic ablution that will insure perfect safety. Therefore, I see no reason why, with such an amount of material as we have on hand, an applicant for graduation should not be required to present a certificate of having attended a certain number of confinements, just as he is obliged to prove that he has dissected a given number of subjects.

We have, then, public obstetric wards amply supplied with material for practice, and we have able men who are willing to teach; we have the students most eager to learn, and still resources for instruction in practical midwifery are in an embryonic retarded state of progress. How long will it be thus? Who or what stands in the way of adding to Cincinnati's numerous advantages another one that will outstrip in usefulness many of those existing? Besides the growing demand for a school of this kind, and the blessing it would confer upon suffering women, it is the duty of the profession, and especially of the teachers connected with our colleges and the medical staff of the City Hospital, that this imperative and long-felt want be at last supplied.

The soil is ready, the germ is sown, let this Society nurture it faithfully, and it will sprout and grow in proportion to the attention it receives. We cannot afford to neglect it. Though it may (and I very much fear it will) remain in statu quo, and another generation pass, and perhaps another, and another if you please, before this hope is realized—that schools of obstetrics will be created and live, is an absolute certainty. It is merely a question of time, of energy, and of a thorough appreciation of its value and necessity on the part of representative and thinking men in the profession.

There is a very considerable element of opposition to the education of midwives among reputable American physicians. They claim that it is impossible for any one not a regularly educated doctor of medicine to be a good and skilful attendant upon a woman in labor. And I have heard some say, "What is the use of teaching women to do that which we can, and prefer to, do ourselves?"

To argue successfully against such prevailing sentiments, I need only refer to the fact that the majority of women, in nearly all the larger, and in a considerable number of the smaller cities of this country are now attended by midwives. This is so, because

it is the custom in nearly all European countries for women to be delivered by midwives. Emigration has brought the *custom* to this country; I am sorry to say, *not* the good midwives.

Annually stupid, bold, and lazy women announce themselves and impose themselves upon the public as "trained midwives" when, indeed, they are no more qualified for this vocation than a bootblack would be to edit a respectable medical journal. The harm they do, the lives lost by their imposition upon the community in which they practise, are known to you all. They cannot be exterminated, because the law does not pursue them.

Many women want midwives, and cannot be persuaded to have doctors; for the reason already mentioned, as well as some puerile fears that "they might use instruments," or resort to some other method which, in their estimation, seems barbarous, in order to deliver them of their children. Since, then, we must have midwives, let us have good ones, the best that can be had.

Thus good and reliable midwives will be a blessing to women, and a great help to the busy practitioner. How often are physicians called away unnecessarily from very important cases to see an obstetrical patient, and on arrival they find it was "a false alarm," owing to the absence of an intelligent nurse or attendant? Again, how often are they compelled to remain at the bedside a whole night or day, or both, when the presence of a competent midwife would have answered the purpose as well, especially if she were previously instructed to send for the attending physician when labor should fairly commence, or at the first signal of danger. Of late years, after satisfying myself that labor would be natural, though slow or retarded, I have resorted to such help repeatedly, when very busy, and found it to be of value in many respects.

Certainly there can be no reasonable doubt but that a woman of ordinary intelligence, who is able to read and write, can be taught so as to be competent to recognize a pregnancy; and when she is doubtful, to call in a physician. If she can recognize the existence of pregnancy, she can be taught to appreciate the deviations from the normal position of the child; whether or not the pelvis is ample, etc. In the absence of abnormal conditions, with labor commencing at the right time, progressing naturally, and terminating normally without an accident (which is the rule in the large majority of cases), who is not willing to admit that a woman, not a physician, but one who has been trained to receive the newly-born child, to tie the cord, to deliver the placenta, wash and bandage the mother, and cleanse the bed, cannot do all this without the costly presence of a doctor? It is to this extent that her function should be limited.

True, the wealthy and those comfortably situated have no need of midwives except by choice, and will, therefore, as a rule, employ a physician. But the wives of mechanics, laborers, and those

not blessed with means will usually, for the sake of economy as well as habit, prefer the services of a midwife. Good midwives, then, are a necessity; firstly, because it is, to a great extent, customary to employ them on account of a natural delicacy, and an aversion existing on the part of husband and wife to have a male attendant; secondly, because they are less expensive than the services of a physician. Habit and fashion have created a demand for them. This being undeniable, it seems to me that, for the sake of humanity if for no other reason, we, as physicians, should regard it as a duty to see that those women who desire the services of midwives should not be exposed to the risk attending the employing of inefficient and ignorant women.

In the face of all of these facts, provision should be made for women desirous of becoming midwives to obtain practical knowledge of midwifery. Then we may demand of them that their work be well done, and furthermore, we must see to it that they do not abuse their privileges.

More might be urged, but enough has already been said to indicate that we need a school of midwifery for the practical training of both physicians and midwives. I have taken the liberty of pointing out to you where such an institution might, with ease, I believe, be established. A school of this kind would be an honor to the profession, a recommendation to the city, and an attraction to the student of medicine and the medical world in general.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, April 6th, 1887.

JOHN WILLIAMS, M.D., *President, in the Chair.*

UTERUS BICORPORALIS.

DR. HANDFIELD JONES showed a uterus having one cervix and two bodies. The left horn had been recently pregnant, while the right one was enlarged, either from sympathetic hypertrophy or owing to subinvolution after previous pregnancies of the right horn. The woman had died of puerperal eclampsia after her fifth confinement. Douglas' pouch was bipartite.

THE MECHANISM OF THE THIRD STAGE OF LABOR.

This paper, by DR. CHAMPNEYS, was the second of a series, and dealt with the expulsion of the placenta.

The author reviews the literature of the subject, including the observations of Lemser, Salin, Duncan, Schultze, Ribemont, and

Ahlfeld. He shows that the question centres round the opposing views of Schultze (which are corollaries of those of Baudelocque) and those of Duncan. The difference is as to the presence or absence of hemorrhage as part of the normal procedure, including the inversion of the placenta; this being described by Schultze and denied by Duncan. The direct observations are very few and are contradictory.

"The author gives his own observations of 70 cases, carefully observed and tabulated, as regards the manner of the expulsion of the placenta and the blood lost in each case; the measures of the membranes and presenting point of the placenta are given in the table. The fetal surface presented in 64, the maternal in 2 (in both of which the cord had probably been pulled upon), the amnion in 4. Adding his results to those of Pinard and Ribemont, the author finds that the fetal surface presented in 127, the fetal edge in 27, the maternal surface in 5. The presenting point was nearer the lower edge of the placenta in 65, nearer the upper edge in 1, midway in 2, no note of its position in 2. The lower edge, or amnion below the lower edge, presented in 16. In the great majority of cases a point within two inches of the edge presented, but on the fetal surface. There was a complete absence of fundal attachments. It was found that the presenting part varies in its position with the position of the placenta. The higher the placenta, the higher the presenting point, and *vice versa*. The average loss of blood before the expulsion of the placenta was six ounces, in the membranes or with the placenta six ounces, making an average of twelve ounces for each labor, not including post-partum hemorrhages.

"The author concludes that a moderate loss of blood is a normal phenomenon of the third stage of labor; the third stage of labor is not either actually or nearly a bloodless operation. He concludes, finally, that:

"1. Some measurable hemorrhage is a normal constituent of the phenomena of the third stage of labor.

"2. The placenta presents in the great majority of cases by a point on the amniotic surface.

"3. The presenting point is almost invariably near the lower edge of the placenta.

"4. The position of the presenting point varies with the position of the placenta.

"5. The 'inversion' of the placenta is not due in the great majority of cases to traction on the cord, but is part of the natural mechanism.

"These observations, therefore, accord in essentials with those of Schultze, though his diagrams are greatly exaggerated. These observations bear on the opinion previously expressed as to the causes and mode of *separation* of the placenta. Therefore.

"1. It is probable that, in addition to reduction of the placental

site, some escape of blood plays a part in the ordinary mechanism of placental detachment.

"2. The slight inversion of the placenta, which does take place, is probably due to this cause.

"3. The effusion of blood is not, in ordinary cases, sufficient to form a large mass bulging into a large uterine cavity behind the placenta."

DR. MATTHEWS DUNCAN congratulated the Society on the elaborate papers just read, not only on account of their intrinsic value, but also because of their bringing the Society into contributing to the progress of the greatest obstetric work of the century.

In the history of midwifery, there were only three works of the very highest class as yet achieved. The first in scientific order of progress was done in the eighteenth century by W. Hunter, whose plates of the anatomy of pregnancy were its crown.

The second was a work mainly of this century, and was known as the mechanism of parturition, and with it were connected many names, especially those of Solayrer and of Naegele.

The third was still incomplete, the greatest, most difficult, and most glorious of all, a work of the nineteenth century, the anatomy of labor.

In this country, no name was so great in the anatomy of labor as that of Barbour, and he was actively engaged in it at this moment. No contribution to it had come from London, and the papers of Dr. Champneys he hailed as worthily bringing a part of it before this Society.

The anatomy of labor made no progress till the introduction of homolographic sections of frozen bodies. No such sections had been done in London, and nowhere had such sections been made in the third stage of labor.

The work of Dr. Champneys was mainly physiological, and should come after the completion of the anatomy of the third stage, for the subject of his work would not be settled till the anatomy was finished.

Failing to find bodies for the sectional anatomy of the third stage, obstetricians had examined the uteri of the operation of Porro. This was an imperfect substitute for frozen sections, and might be very misleading. The Porro uterus, examined by Barbour, showed that the placental area might be contracted to a diameter of four inches without separation, and the absence in these cases of hematoma was hostile to the theory of separation by uteroplacental hemorrhage, but it did not disprove it.

Absence of separation, with contraction to an area of four inches in diameter, seemed to astonish many and to favor the detrusion theory of separation. Dr. M. Duncan always imagined a much greater contraction as necessary for separation.

Referring to his own paper of 1871, which was now a matter of "ancient history" and would not be praiseworthy at this date; yet, admitting its imperfections, he was still an unbeliever in the presence of hematoma in a natural separation in a theoretically natural case, and he continued to hold that the cake descended edgewise through the cervix, and referring to Dr. Champneys' table, columns A and B confirmed this.

The old detrusion theory of separation he had found difficult to make intelligible. He could not understand the production of de-

trusion till after separation. He could not imagine detrusion pushing off the lowest flap (as in the Porro case exhibited by Dr. Galabin) without pushing off all above it.

DR. GALABIN understood that the author had not come to a decided opinion whether the separation of the placenta was from the periphery to the centre or vice versa. Dr. Galabin thought this depended on the cause of separation. If the cause were from shrinking of the placental site, separation must be from the periphery inwards. If hemorrhage was the cause, it must occur away from the margin, and could only effect a separation from the centre towards the periphery. Even if it were admitted that an effusion of blood is normally present, it does not follow that the hemorrhage is a cause rather than a consequence of detachment. Dr. Galabin thought that the Porro uterus was in favor of shrinking of placental site with possibly detrusion as a cause of detachment, and not hemorrhage. Detrusion, acting as a supplementary cause to shrinking, would cause detachment of the lower margin first. As regards the mechanism of expulsion, he thought it depended on the management of the third stage of labor. In Salin's cases, the placenta presented at the os by its lower margin, and there was no inversion. In Champneys' cases, there was partial inversion. In Lemser's cases, the upper edge usually presented. The probable reason was that the management of Salin's cases promoted the best contraction, that of Lemser's the greatest relaxation, that of Champneys' an intermediate condition. Dr. Galabin did not think that leaving the uterus unsupported with the patient on her side, and the fundus dependent, would give the most ideally natural mechanism.

DR. HANDFIELD JONES thought that an ideally healthy labor was bloodless as regards the separation of the placenta, though there might be variable amounts flow afterwards.

DR. BOXALL thought there were causes for separation of the placenta not mentioned in Dr. Champneys' papers. After the birth of the child, the conditions were profoundly altered, the flow of blood from the fetal portion of the placenta to the lungs ceasing, the thin lamina of maternal tissue is deprived of support towards the cavity of the uterus. The position in which the placenta is implanted on the uterus Dr. Champneys has shown to be important, and this, again, is indissolubly connected with the separation of the membranes. As long as the membranes at the edge of the placenta remain adherent to the uterine wall, inversion of the placenta is maintained. If any portion of the attachment gives way, the adjacent margin of the placenta being no longer supported becomes the most dependent part, and the subplacental hematoma finds an exit of escape, and the lower the implantation of the placenta the more easily will this happen. There were other causes that altered the process of detachment, as pulling on the cord and abnormal adhesions. Dr. Boxall explained a series of experiments which he had made to determine the placental presentation by means of staining. He also confirmed Dr. Champneys' remarks on the rarity of fundal attachment of the placenta. He had found the fundus overlapped (to the extent of $1\frac{1}{4}$ inches) only once. Out of 100 cases, he should say that the placenta would occupy the upper zone in 21 cases, the middle zone in 77, and the lower zone in 2.

DR. GAUDY wished to know if kneading of the uterus was made use of to expel the placenta ?

DR. W. S. GRIFFITH thought there was some analogy between the detachment of the membranes in membranous dysmenorrhea and the detachment of the placenta.

REVIEWS.

LEÇONS CLINIQUES SUR LES MALADIES DES OVAIRES.—CLINICAL LECTURES ON THE DISEASES OF THE OVARIES. By T. GALLARD. Physician to the *Hôtel Dieu*. Paris: J. B. Baillière et fils, 1886, pp. 463.

These clinical lectures deal with the pathology of the ovaries, and they constitute the continuation of those published in 1884 on the subject of menstruation and its disorders. They exemplify the great loss which French gynecology has suffered in the recent death of the author, for they speak for his having been a careful student and able teacher. The lectures are thirteen in number, and each gives, without superfluous detail, the essential points in regard to the etiology, diagnosis, and treatment of affections of the ovary, and of those which are often consecutive, in particular periuterine hematocoele, which the author claims is in the large proportion of cases due to some disturbance in the act of ovulation, "a true extrauterine discharge, the mechanism of which does not differ at all from that of the establishment of an ectopic gestation."

The lectures are of interest, although we do not find that they outline the affections with which they deal in any other light than that which is customary with English writers. E. H. G.

A PRACTICAL TREATISE ON OBSTETRICS. By DR. A. CHARPENTIER, Adjunct Professor of the Faculty of Medicine, Paris. Translated under the supervision of, and with notes and additions by EGBERT H. GRANDIN, M.D., Obstetric Surgeon to the New York Maternity Hospital, Instructor in Gynecology at the New York Polyclinic, Fellow of the Obstetrical Society, etc. In four volumes, pp. 1,642: 751 wood engravings; 7 colored plates. Being a part of a "Cyclopedia of Obstetrics and Gynecology," published by Wm. Wood & Co., New York, 1887.

Five years ago, when this product of Charpentier's labor was first given to the profession (Paris, 1882), it was generally acknowledged to be the most complete work on obstetrics that had ever been written, and was a faithful and unbiassed mirror of the theories and of the practice of the most renowned obstetricians of the world. Systematic and learned, Dr. Charpentier was not only theoretically, but practically familiar with all that was known concerning the subject about which he wrote. Associated with Pajot and Depaul, and as head of the obstetric clinic at the *École de Médecine*, he had every opportunity to collect the information which he has expressed in this work in a strikingly original, lucid, and practical way. In the few years that have elapsed since its publication, there are certain topics wherein

both practice and opinion have somewhat altered, and there are others which have become settled on a firmer basis than was then the case. It has been the aim of the editor to express these changes and to add the requisite new matter, which should bring the work in every respect up to date. He has also in many places criticised such methods as have seemed to him not completely in accord with the views which we hold on this side of the Atlantic. These additions and notes, which add greatly to the value of the work, and which throughout are inclosed in brackets, have necessitated some slight condensation of the text, though nothing has been omitted at the expense of the author's thought, or of the value of the work as one of reference.

The typographical work on the last three volumes is excellent, that of the first bears some marks of haste, which no doubt will be corrected in a second edition. The engravings are, in the main, very good, in many places new cuts having been substituted or added.

The work has already been noticed in this journal, having been reviewed in 1883 by its present editor, Dr. Grandin (vol. XVI., p. 956).

Of the four volumes in which it is now divided, the first includes the anatomy of the genitals, menstruation, fecundation, normal pregnancy, and normal labor. The most important change in this volume is the omission of Charpentier's section on embryology, and the substitution in its place of that admirable chapter contributed to Barnes' "System of Obstetric Medicine and Surgery," by Milnes Marshall. Charpentier condemns Credé's method of placental expression, evidently not with a full understanding of its rationale or *modus operandi*, while the editor in a clearly expressed note describes the method as we understand it, and shows, by convincing argument, its immense superiority over the unphysiological method of removal by traction, which the author advises. Some other points advocated by Grandin, in contradistinction to Charpentier's teachings, are: the value of Hegar's signs of early pregnancy; the use of the binder after labor, as at least adding much to the patient's comfort: the use of ether instead of chloroform in operations requiring much time: the routine use of ergot after the end of the third stage; the careful cleansing of the new-born's eyes, and the use, where there is suspicion of infectious discharges from the mother, of Credé's prophylactic measure against ophthalmia: the uselessness of intra-vaginal douches in the normal puerperium, or unless there be some distinct indication for their use; and the advocacy of the breast binder, as used at the New York Maternity Hospital, for controlling the lacteal secretion and preventing mammary trouble.

The second volume treats of the pathology of pregnancy in a remarkably complete and comprehensive manner. The editor's additions and criticisms in the chapters on the premature birth of the fetus, where he advocates the immediate removal of the secundines so strongly insisted upon by Mundé, and on the treatment by electricity of ectopic gestation, are especially well timed.

The pathology of labor and an excellent chapter on the uses of ergot occupy the third volume. These subjects are discussed with the same thoroughness and level-headedness that characterize the whole work. The chapters on teratology are of great interest

and are remarkably complete and well illustrated, much new matter having been added by the editor.

The fourth volume is devoted to the consideration of the various obstetric operations and the pathology of the puerperium. The evolution of the obstetric forceps and some of the startlingly complicated phases of its development, where it has figured as *leniceps*, *retroceps*, *tractor*, or *sericeps*, are most vividly portrayed. In a sketch calling attention to some of the details of the modern Cesarean section, the editor makes it apparent that to no single operator should belong the honor of having it called after him, and that while Säger undoubtedly deserves much credit, it would be invidious to give his name to the procedure to the exclusion of others who have also contributed largely to its success; he therefore prefers to call it the modified Cesarean section.

The last one hundred pages, those treating of the puerperal diseases, would alone be enough to render the work indispensable to any of us. The pathogeny and treatment of puerperal fever are described and discussed in a most clear and impartial manner; the very numerous and important interpolations by Dr. Grandin, in which he differs in many respects from the author, rendering the chapter a clear exposition, not only of the views of the old world, but also of the new.

The index is not encumbered with unnecessary detail, though it seems complete in every way.

For a very complete and exhaustive review of those remaining volumes of the cyclopedia which have been taken from Billroth and Luecke's "*Handbuch der Frauenkrankheiten*," our readers are referred to the notice of that work which has already appeared in this JOURNAL (vol. XIX., pages 771, 886, and 1,007).

BROOKS H. WELLS.

DISEASES OF WOMEN. A Handbook for Physicians and Students by DR. F. WINCKEL, Professor of Gynecology and Director of the Royal University Clinic for Women in Munich. Authorized translation by J. H. WILLIAMSON, M.D., Resident Physician Allegheny General Hospital, Allegheny, Pa. Under the Supervision and with an introduction by THEOPHILUS PARVIN, M.D., Prof. of Obstet. and Diseases of Women and Children in Jefferson Medical College, Philadelphia, pp. 654, 117 woodcuts. Philadelphia: P. Blakiston, Son & Co., 1887.

"Prof. Winckel's treatise upon diseases of women was issued in Leipsic one year ago. Its author is recognized as one of most eminent and able among European teachers of obstetrics and gynecology, and has been a most industrious contributor to the literature of these subjects, only one of his volumes, however, having, previous to the present, been translated into English. Nevertheless, occasional articles from his pen have been published in American medical journals, so that, even independently of his larger works, his name is well known to the American profession."

The work is like its author, thorough and systematic; its classification is excellent; its teaching well abreast of the times, yet eminently conservative. Much importance is given to pathological anatomy, and much to gynecological medicine. "No one can read and thoroughly study this volume without deriving not only much important practical information, but also finding his views of gynecology growing larger, and the superstructure resting upon a broader and firmer foundation."

After a short introduction by Professor Farvin, from which the above quotations have been taken, the work proper begins, and describes in succession, Anomalies and Diseases of the External Sexual Organs, of the Vagina, of the Uterus, of the Fallopian Tubes, of the Ovaries, of the Uterine Ligaments, Peritoneum and Pelvic Connective Tissue, of the Female Breast.

The author advises the closure of all deep perineal lacerations, and in his description of the method of operating, which might with advantage be a little more precise in some respects, he states very truly that "it is immaterial as to what is used for stitches." It is human nature to attribute our failures and mistakes to other than the true cause, and so it is here. Want of success has been charged to the sewing material, until now almost every operator recommends a different kind. "The shape of the denuded surface is of minor importance; it is unnecessary to follow any given scheme too closely." One must be governed by the exigencies of each case.

Some of Dr. Winckel's teaching concerning the use of pessaries is open to very decided criticism; for instance, on page 134, an instrument which should be mentioned only to be condemned, the Zwanck hysterophore, is advocated as being of "signal service in special cases" of vaginal prolapse, while pessaries, of which Gehrung's is a type, which are of "signal service," are not alluded to. Again, we believe that hard-rubber pessaries can be fitted in any case where pessaries of any kind are indicated, and that the soft-rubber instruments should, with rare exceptions, be discarded, as they so soon become foul and evil smelling. We cannot agree entirely with the author's statements regarding the harmlessness of intrauterine stem-pessaries, though, perhaps, did we confine ourselves to the use of the very slender, light, and elastic ones that he uses we might not find them to be such treacherous allies. There are many little points concerning the safe and effective use of pessaries for which our German confrères could with advantage look to us. These and other points might easily have been added as notes by the editor, and would have increased the value of the work.

The chapter on cystic disease of the ovary is very good, though we think but few will agree with the author when he states that "numerous cases of fluctuating tumors of the internal genital organs, which grow more or less rapidly, will require an exploratory puncture to establish an accurate diagnosis, before attempting the radical operation," especially as he uses a trocar and canula of "medium calibre." In all cases, we hold that it is better and safer to make an exploratory incision than to tap, except, perhaps, in large, thin-walled, unilocular cysts, probably ligamentous. Even in these cases the fine needle of a hypodermic syringe is all that it is proper or necessary to use to enable us to obtain enough of the fluid for examination. Tapping as a curative measure can no longer compete with more modern surgical interference.

The operation for removal of ovarian tumors is done by Winckel with strict attention to every detail of the Listerian method, and to his great care in this respect he attributes much of his success.

B. H. W.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume XI., pp. 512. D. Appleton & Co., New York, 1887.

The papers and discussions of the meeting of September, 1886.

which go to make up the bulk of the present volume, have already been given in abstract in this JOURNAL (vol. XIX., page 1,051 *et seq.*), so that there remain for notice only the papers presented to the Council by the candidates elected to fellowship at this meeting.

Dr. Chas. M. Green, in a paper on occipito-posterior positions, describes a way of increasing flexion, and so promoting or causing anterior rotation by the use of forceps, introduced with the pelvic curve reversed; he even, under some circumstances, allowing intra-vaginal rotation of forceps and head together. This method, even in the hands of an expert, would seem to present elements of danger fully as serious as an occipito-posterior delivery, and in the hands of the average practitioner would be entirely unjustifiable.

Dr. E. C. Dudley discusses the merits of the intra-peritoneal elastic ligature and describes an ingenious combination ligature which he has devised, as follows: "The ligature consists of a piece of tubing and a strong silk cord. The cord surrounds each end of the tubing and is there made fast by tightly drawn knots. Sufficiently slack cord is left between the knots to equal in length the tubing when fully stretched. The free ends of the silk are drawn through the rubber close to the knots. The rubber part, when fully stretched, should be long enough to go once or twice around the pedicle, the silk ends being carried round once more and tied. This combination of silk and rubber in the same ligature has the following advantages: The large rubber knot at which the elastic ligature is liable to break is avoided, a knot of silk taking its place; breaking of the rubber from overstretching during the application of the ligature is impossible, because its extension is confined within proper limits by the silk cord." Dr. Dudley also describes a manner of using this ligature in supra-vaginal hysterectomy.

Dr. J. E. Janvrin reports a case of tubal pregnancy of unusual interest. The gestation was about seven weeks advanced and the patient had had symptoms of internal hemorrhage nine days before her death, which occurred eighteen hours after the third application of galvanism. The electricity, while it had destroyed the fetus, had nothing whatever to do with the mother's death, which an autopsy showed to have been caused by a secondary arterial hemorrhage from the same point which had bled nine days before. There had been no rupture of the sac-wall. Dr. Janvrin, from a consideration of this and other cases, pleads for immediate laparotomy when symptoms of hemorrhage become at all alarming.

Dr. A. F. A. King, in obstructed labor from short funis, recommends in place of forcible delivery a sitting posture, thus forcing the womb and its contents down deeper into the pelvis; affording the woman a more powerful control over the abdominal muscles, and enabling the womb to resume its normal contractions. This suggestion, coming from one who is an acknowledged authority in his specialty deserves attention and trial.

Dr. A. W. Johnstone, in a paper of one hundred and twenty lines, points out the connection between protracted and recurrent pelvic inflammations and a suppuration or cirrhotic change of either the tubes or ovaries. This causative relation has now been pretty widely recognized for several years, and has come to be an accepted fact.

Dr. H. Marion Sims reports a unique case of hystero-vaginal

enterocele, cured by laparo-hysterectomy with attachment of the vagina to the lower angle of the wound.

Dr. W. Gill Wylie closes the volume with some observations on abdominal surgery, based upon fifty-seven laparotomies performed by him within a year, in which, after speaking of the benefits to be expected from the removal of diseased tubes or ovaries and the frequency with which they were mis-called "chronic cellulitis," he calls particular attention to the causes and treatment of ventral hernia after laparotomy.

B. H. W.

ABSTRACTS.

1. O. Schlesinger : A Laparo-Salpingotomy Successfully Performed in Russia in 1784 (*Centralbl. f. Gyn.*, No. 13, 1887).—In view of the growing interest felt in the pathology of the Fallopian tube and its treatment, S. thinks it appropriate to render accessible to wider medical circles a laparo-salpingotomy successfully performed in Russia in 1784. This operation, though not called by this name, is commented on by the operator, Dr. Seydel, as follows: In a woman aged 42, mother of three children, who had aborted two years previous to the disease which required the operation, a small, round and firm tumor was observed in the summer of 1783. It was situated on the right side of the abdomen, and in size and consistence bore some resemblance to the uterus in the third month of pregnancy. The tumor grew visibly, especially during the courses, was accompanied by very violent pains, and finally reached the size of the head of a two-year-old child, at the same time becoming evidently softer. Vaginal examination showed that the tumor was connected with the uterus by a round and firm pedicle. In the winter of the same year the catamenia changed in type, while the pains occurred also in the intermenstrual period. The author explained to his patient (a student at his course for midwives) that he believed the right ovary to be diseased and in his opinion not to be cured without operation. The patient, though informed of the risk of the operation, consented.

The operation was performed on February 21st, 1784, in the town of Sarepta, situated in the government of Astrakhan. The patient was prepared with baths, some doses of light laxatives and Peruvian bark; before the operation she received a small quantity of tincture of opium and saffron, syrup of white poppy, and Hoffmann's drops. After dividing the external abdominal coverings and the muscles in a line drawn from the umbilicus to the right inguinal region across the middle of the tumor, the author severed the peritoneum with a button bistoury, guided by the finger: three arteries were ligated: the protruding intestines were crowded back into the abdomen by means of a napkin soaked in warm milk; the spherical tumor, which was inclosed in a thick, firm capsule, contained a fluctuating fluid, was connected with the uterus by a pedicle, and its upper limit reached the crest of the ilium; on the posterior and lower surface of the tumor the greatly enlarged fimbriae

of the tube were perceptible. The lower and lateral surfaces of the tumor were so closely adherent to the adjoining muscles and organs that it could not be isolated as desired; the author therefore concluded to open it. This having been done by a long incision, there exuded a thick, sticky fluid without odor and of chocolate color, weighing one and a half pounds. Careful examination proved beyond doubt that the author had to deal with a tumor of the tube and not of the ovary: "*Qua quidem investigatione certo et indubitato cognovi tumoris huius sedem non ovarium fuisse, sed tubam.*" A decoction of Peruvian bark and a solution of myrrh were then poured into the cavity of the tumor, and a wad of charpie soaked in *Balsamum Arcae* was placed in the wound of the wall of the tumor. After the intestines had been isolated from the parietal peritoneum by pieces of linen dipped in oil of rose, the author bandaged the external abdominal wound with plaster and linen, but subsequently closed it by "*suturæ cruentæ.*"

The restricted space of an abstract does not permit a fuller report of the course of the operation and the means adopted by the author to save his patient. In the first few days after the operation, Seydel strove to secure a free outflow of the fluid forming in the tumor cavity by inserting tents; when the latter appeared no longer sufficient, and a silver tube introduced likewise fell short of the expectations, the author with his mouth sucked out a fetid, thick fluid, which operation was repeated four times daily; otherwise the patient was directed to lie on her side with the abdomen turned downward. Some fever was present until the beginning of March, but then convalescence progressed visibly: the wound secretions became less in quantity and lost their odor, the wound contracted, and the patient recovered completely.

From this brief report it may be seen that a successful laparo-salpingotomy has been performed in Russia as early as 1784, according to a method not much different from the one in use to-day, *i. e.*, the tumor was opened and drained because the adhesions did not permit extirpation; in character the tumor was evidently a hemato-salpinx.

I. FURST.

2. Uherek : Functional Neuroses, and their Dependence on the Genital Organs (*Arch. f. Gyn.*, XXVII., 3 seq.).—The author states that the frequency of these neuroses is such as to constitute a social calamity. He discusses the subject from the standpoint of a practical gynecologist, basing his deductions on over one hundred instances in which the neurosis assumed one or another of its protean aspects. He believes with Beard that the chief source of these functional disturbances is a depressed condition of the entire nervous system, which exists although it is not anatomically demonstrable. Is there, he asks, any anatomical difference between the male and the female nervous system which will explain the greater frequency of the neuroses in the latter? The answer to this question must be sought in the greater development of the genital system in woman than in man, the greater calls which are naturally made upon it, its greater activity during the period from puberty to the menopause. The genital system of the man plays rather a passive part in his existence, that of the woman dominates her very being. From these considerations it is not surprising to find a greater development of the vessels and the

nerves in the female pelvis, and consequently a greater reactionary sensibility in her nervous centres. Further still, the sympathetic abdominal nerve centres in woman are more developed than in man, as also the brain in proportion to the whole body. Starting, then, on the basis of impoverishment of the general nervous system in women as the cause of neuroses, the author proceeds to analyze in turn each of the neurotic manifestations which may be the outcome—in particular hysteria, neurasthenia, catalepsy, epilepsy. Etiologically, these affections are the same, although symptomatically they constitute different affections. Whilst the neurologists claim that etiologically functional neuroses are dependent on a general neuropathic cause, the older gynecologists aimed to trace their origin from disease of the sexual system, the so-called reflex neuroses. The writer seeks the cause in the mean between these two views. There can be no question but that heredity, method of life, social conditions, constitutional diseases, play a large part in the development of reflex neuroses. Injudicious schooling, manner of dress, irregular hours, etc., during the period of childhood and at puberty, are directly responsible for the development of the neuroses, since they lead to disturbances in the menstrual function and thence to a chloro-neurasthenic constitution.

(Without following the author further in his discussion of each neurotic manifestation, we pass at once from general etiology to deductions as to treatment.) Purely symptomatic treatment should be limited to very exceptional cases. The futility of such a course of action is best evidenced by simply calling attention to the numerous drugs which are recommended and are daily being lauded for the cure of reflex neuroses. The symptoms may be in general referred to three systems: the cerebral, the spinal, the digestive. Each in turn may be affected, or the three coincidentally. If we treat each symptom separately, the effect can only, of course, be momentary. Morphia, chloral, atropine, arsenic, such are the chief drugs which there is danger will, sooner or later, become the mainstay of neurotics. These drugs, it should be remembered, are themselves capable of developing the reflex neuroses; if we give them, in a routine way, therefore, we simply aim to cure by agents which themselves will produce the same symptoms. (A principle which will, however, recommend itself to the genuine homeopathist.) In routine medication, preference should be given to assafetida, valerian, castoreum, quinine, citrate of caffeine, salicylate of soda, the bromides, iron. As to iron, it is important, practically, to bear in mind that the less the anemia is dependent on the primary neurosis the greater will be its value. After hemorrhages, for the consecutive anemia or chlorosis, it is of value; in pure hysteria or neurasthenia it is harmful. The king of the nervines is unquestionably the bromide of potass. (or soda, or ammonium.) It acts by depressing the excitability of the nervous system. The drug should be administered continuously and in large doses—one drachm to ounces daily the author is in the habit of administering, and to prevent gastric or intestinal disturbance, he recommends ample dilution of each dose: when two drachms daily are ordered, it should be taken in fully a quart of water. In general, it may be said that, aside from nervines, drugs are useless even as adjuvants towards cure; the physician must learn that he, not medicine, is to cure the disease. Ordinarily, local treatment must be

combined with general medication; the former is sometimes more requisite than the latter, and the reverse holds true. It is, however, only exceptionally that the local treatment of reflex neuroses gives speedy and brilliant results. Before any treatment, the physician must always place general diagnosis—in other words, he must be not a mere specialist, but a general practitioner as well. (The author then reviews the various local disorders which may aggravate or be the direct causes of neuroses. His directions as to treatment are eminently sound, practical, and correct. He introduces also a number of strikingly illustrative cases. Displacements and distortions of the uterus, prolapse of the ovaries, wanderings of the liver, spleen, kidneys, inflammatory exudations in the pelvis, the injuries the result of parturition, and of injudicious obstetrical intervention which furnishes such a large proportion of his material to the gynecologist, such are the chief conditions of which he speaks.) In subinvolution, the author has derived excellent effects from the use of hydrastis, which he much prefers to ergot or ergotin. He is in the habit of employing iodoform extensively locally, and does not often meet with a patient very susceptible to it. Castration for oöphoritis he believes should be limited to cases which resist every known method of less radical treatment. In case of the neurotic symptoms of the climacteric, the author lays stress on the therapeutic effect, in these women, of the knowledge that the symptoms are not dependent on organic disease. Finally, in the rational treatment of any neurosis, too much stress cannot be laid on the value of good fresh air, rest, and baths. General faradization is an excellent adjuvant, as also, perhaps, franklinization. Galvanism is of great utility in local rather than in general neuroses, such as the various neuralgias. (We would strongly recommend the reading of this article in the original.)

E. H. G.

ITEM.

Professor Olshausen, of Halle, has accepted the Chair of Gynecology at Berlin, rendered vacant by the death of Prof. Schroeder. Prof. Kaltenbach goes from Giessen to Halle; Dr. M. Hofmeier, late first assistant to Schroeder and tutor at the Berlin University, succeeds Prof. Kaltenbach at Giessen.

Dr. Hofmeier has announced his engagement to Miss Elizabeth Schroeder, oldest daughter of his late chief.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] JULY, 1887. [No. 7.

ORIGINAL COMMUNICATIONS.

CATTLE-HORN LACERATIONS OF THE ABDOMEN AND
UTERUS IN PREGNANT WOMEN.

BY

ROBERT P. HARRIS, A.M., M.D.,
of Philadelphia.

EVERY evidence is of value that can be brought from the past to show the danger *per se* of opening the abdomen and uterus of a pregnant woman for the purpose of delivering her of a living child, when such cannot be accomplished *per vias naturales*. It will not be sufficient to claim that this operation has been blackened in character through the statistics of the past, up to the introduction of the improved method of suturing the uterine wound in May, 1882; it must be proved that these statistics were made, such as they are, by bad management, chiefly in the obstetrical ante-treatment, and in a measure also by faults in the detail of the surgical operation itself. We must separate the obstetrical management of the case prior to the use of the knife from its treatment after the knife has been introduced. We must note the time the woman has been in labor; the expedients that have been tested fruitlessly for extracting the fetus through the pelvis; the pulse, temperature, and de-

gree of exhaustion of the patient ; the degree of severity in her labor pains ; and finally, if the fetus is vigorously alive, shows signs of heart failure, or is actually dead.

Something was established, notably in this country, by the favorable results of a small proportion of cases in which the operation was performed a short time after labor began, while the child was vigorously alive, and where pelvic measurement, rather than failing experiment, was allowed to decide that the use of the knife was an absolute necessity of delivery. Such cases recovered, not from uterine suturing, except in a few instances : not from antiseptic treatment, for it was unknown at the time ; but from the fact that the uterus still retained its contractile force, and, when it did contract after the removal of the placenta, did not afterward relax to such a degree as to permit the escape of the lochia into the pelvic cavity.

Notwithstanding the proofs of the value of early elective operations, as shown by the individual experience of operators in Belgium, Germany, and France, where several cases had been under care in a few years in the same hands, as well as by the successes of Gibson and others in the United States ; very little attention has been apparently paid in Great Britain and our own country to the importance of acting out the instructive lessons of these exemplars, and we have, for years past, been making history in the most discreditable way, losing case after case, by operating *in extremis* as a last resort, under a fear of the abdominal section being almost necessarily fatal, when, in fact, it is chiefly made so by delay and tampering with the patient.

The very remarkable results of the Saenger method in Europe during the last five years have demonstrated the value, not only of antiseptics and the peculiar uterine closure, but the intimate connection that exists between the saving of the life of the child and that of the mother. Not only has the operation been performed wisely, but the patient has been operated upon under conditions favorable to success with the knife. We have only to note the fact that, in two German and one Austrian Maternities, there were twenty-two women and twenty-three children saved by twenty-three operations. These results speak volumes for the obstetrical conduct in the cases, irrespective of the work of the knife and suture. When, in this country, we learn the value of pelvimetry in deciding whether a patient should be subjected to a laparo-hysterotomy

or not, and the importance of selecting this operation early instead of, as is too often done, yielding to the necessity of it after failures with the forceps, version, and perhaps even craniotomy, then we may anticipate a degree of success such as has recently been attained by Prof. William T. Lusk at Bellevue Hospital, in New York. Fortunately this case was exceptional, in the fact that it came directly, and at the very commencement of labor, under the care of an operator who knew the importance of an early operation, and recognized the necessity for its performance. Hence the exceptional result in saving mother and child, for which we congratulate the operator.

Looking into the past records of New York City, and of the United States at large, we find that, of ten hospital Cesarean cases in our country, that of Prof. Lusk is the first to recover; that he is the first to save both mother and child in all the history of New York; that he is the only operator to save a mother by laparo-hysterotomy out of eleven, in a period of nearly forty-nine years, in his own city; and that he is the only one out of seven to meet with success under the Saenger method in the United States. Eleven Cesarean operations in New York City have saved two women and three children in all her history. Laparo-elytrotony has in a measure compensated for these unfortunate results; but still the fact stands, as will be shown presently, that the cow and her congeners have produced better proportionate results, saving five women and five children out of nine laparo-hysterotic rips. To equal this result of the cattle-horn operation in saving five women, we must go back over the records of the last seven years in the United States, during which period five women only have been saved out of twenty-seven, with ten of their children. This is a far better showing for the cow-horn than the knife, and has a world of meaning in determining the risks and the causes of death under the latter. No one will pretend to say that the terribly lacerating horn will produce less shock to the woman than the carefully incising knife under anesthesia; there must then be some reason to be found for the difference of result in the different conditions of the women when subjected to the horn and knife respectively. It will not only then be profitable to bring together the cattle-horn cases of the past, but will furnish to the medical reader a collection of rarities never before made, except partially and

very imperfectly; and will give access to records, some of which are only to be found in very rare works.

CASE I.—Zaandam, Holland, August 29th, 1647. The subject in this case was the wife of a farmer, Jacob Egh, and in the last month of pregnancy, when she ran to the rescue of her husband with a boat hook in hand to deliver him, as he lay upon the ground, from the furious attacks of an enraged bull. This turned his attention to herself, and she was “tossed a story high into the air, and her belly torn open in the assault. The fetus escaped with the secundines from the wound in the abdomen, and lay fallen in a damp and remote place. It was carried home by a nurse, carefully attended, and on the first of September, being still alive, was baptized with its paternal name.” This infant boy, thus ruthlessly ripped out, escaped injury with the exception of bruise marks on the upper lip and abdomen, which were somewhat swollen, “and gathered strength with age through diligent care.” A letter from Prof. Halbertsma, of Utrecht, under date of March, 1886, reports that the child lived nine months.

The farmer and his wife were placed under the care of Dr. Ireton, an Englishman and Farro Bernhard. The farmer had both scapulæ broken, “near the acromion or spine of the scapula;” the last rib fractured near to the spine; a wound in the left hypochondrium; another in the left groin; the seventh cervical vertebra broken in; and bruises in the face, back, buttocks, and axillæ. He had no power of speech, and his whole body was more or less paralyzed; he lived thirty-six hours after the injury.

“The woman had a wound from one ischium to the other, and through the pubic bone, in the shape of a crescent. She had another large wound through skin and peritoneum into the uterus, twelve finger-breadths in length, from which the child issued. . . . Although the uterus had swollen after this Cesarean labor, the swelling nevertheless went down, and it contracted so that the opening scarcely admitted the fingers. Through this aperture blood escaped for twelve hours, and it was then observed to be closed by grumous hardened blood, from which place the blood arising was the cause of nausea and vomiting, both of blood and excrement. The lesser intestines were exposed but uninjured, and not swollen in the beginning, but with the mesentery, which was injured, lay outside. The sphincter of the bladder was also injured, and the urine escaped involuntarily; the membranous ligament of the uterus was also ruptured in front. The woman, of more delicate constitution than the man, survived her injuries four hours (*ab accepto vulnere horas 4 supervixit*).”

This last sentence is evidently an error, as it does not correspond with the statement that she bled for twelve hours. Sue, in his “*Essais Historiques*,” Paris, 1779, Tome I., p. 209, says that she survived thirty-six hours. This is also probably an

error, although it is the traditional record of Holland at the present day. There hung for many years at the back of the choir of a church in Zaandam,¹ a painting commemorative of this accident; but according to Prof. Halbertsma's letter, it is no longer there. Its presence caused the edifice to be commonly known as the "Bull Church."

(See Thomæ Bartholini "Historiarum Anatomicarum Rariorum Centuria," I. et II. Hafniæ, 1654, pp. 180-184.)

CASE II.—Dillenberg, Germany, October 20th, 1779. The subject was a poor multipara, named Schulers, of Offdillen, in the principality of Dillenberg, of delicate build, but healthy, and was gored by an ox when in the sixth month of her pregnancy. The accident happened at 2 P.M. of the above date, the horn entering the right of the hypogastric region, three inches from the linea alba, and perforating the uterus. She held on to the other horn until rescued by her husband who, in disengaging her, made a fresh wound two inches long, exactly in the direction of the linea alba, which was attended by a loss of substance, and formed a common wound with the first. A considerable hemorrhage resulted, and the right arm of the fetus protruded.

Dr. Frederick Augustus Fritse, physician at Dillenberg, saw the patient ten hours after the injury, when the hemorrhage had nearly ceased, and found her in a comparatively favorable condition. She acceded to a proposition to deliver her by the Cesarean section, but as it was past midnight, and no immediate necessity appeared to exist, he waited for daylight and operated at 7 A.M., having in the interval covered the wound, ventilated the chamber, and administered such remedies as her condition required. Having introduced his index finger into the initial part of the wound, Dr. Fritse enlarged it with a scalpel to the extent of three inches toward the umbilicus and through the right rectus muscle, and then again downward for an inch toward the right abdominal ring. Finding the situation of the placenta to be in the right side of the uterus, he extracted the fetus, and then removed the placenta which was firmly attached; he then removed the coagula from the uterine cavity.

The uterus having contracted, the abdominal wound was closed with interrupted sutures and a bandage. The whole operation and dressing occupied about fifteen minutes; loss of blood estimated at about seven ounces. The patient was troubled with nausea, some vomiting, abdominal pains, acid eructations, fever, and cough, but notwithstanding slowly recovered. By the fif-

¹ Zaandam, or Saardam, is a small port town across the Y from Amsterdam, and is best known from the fact that Peter the Great went there to learn ship-building and remained only a week, as he was not able to preserve his incognito. Bartholini locates the town incorrectly in Belgium, under the name of Sardem.

teenth day she was in a good condition; fever and cough gone, sleeping well, evacuations natural, and appetite returned. Wound healed in about five weeks; and in two months she was able to resume her ordinary occupations.

Mrs. Schulers again became pregnant in August, 1780; was very well for four months, when the cicatrix began to thin, requiring abdominal support. She gave birth, after an easy labor, on April 28th, 1781, to a dead fetus, and died in seven hours, from hemorrhage into the abdominal cavity.

Autopsy.—Twelve pounds of extravasated blood found in abdominal cavity; peritoneum adherent to cicatrices and omentum adherent to peritoneum under seat of wound; cecum adherent to peritoneum reflected over uterus on the right side; veins of uterus and right ovary much enlarged. Coagulum of blood found between right ovary and right lateral portion of fundus and body of the uterus, forming a peritoneal sac with an aperture through which blood had made its way into the abdominal cavity. The uterus was thinned in the seat of laceration, but the cicatrix was scarcely distinguishable save for this attenuation. The placenta still adhered; the uterine wall was not lacerated; the other abdominal viscera were normal. What connection there was between the hemorrhage and the former delivery could not be ascertained. (*London Med. Jour.*, vol. II., 1790, pp. 146-160. "Vermischte Chirurgische Schriften," von J. L. Schmucker, Berlin. "Bibliotèque Chirurgicale" par M. Richter. *Jour. de Chirurgie* par Desault, 1791, pp. 326-331.)¹

CASE III.—Parish of Zecoytia, Province of Guypuscoa,² Spain, June 25th, 1785. The subject of injury was Marie Gratien, a robust multipara, pregnant nine months, who was gored by an ox in the superior part of the hypogastrium, making a transverse wound eight inches in length, through which the uterus, wounded in the same direction, but not entirely torn into its cavity, protruded. Drs. Antonio di Zubeldia and Don Martin Monaco were called to take charge of the case, and while preparing to effect delivery per vaginam, the woman was attacked with hiccup, which produced a rupture along the line of the laceration, and a dead fetus was expelled. Dr. Monaco found the placenta detached, and extracted it; the uterus contracted and resumed its natural position. Having removed the clots of blood which covered the rectum, he deferred the dressing of the wounded uterus until the next day, because of the frequent faintings of the patient. He contented himself with prescribing a position to favor drainage, and left her for the night in the care of an assistant; on the next morning he sutured the abdomen, and dressed the wound.

The patient was attacked with traumatic fever, and was twice

¹ Dillenberg is sixty miles southeast from Cologne, on the river Sieg, a branch of the Rhine.

² N. border of Spain, on the sea, and near the French coast.

bled; but no sensible improvement took place. On the seventh day, there was a sudden change, marked by a small, frequent pulse, prostration of strength, diminution of heat, and confusion of ideas. Dr. di Zubeldia writes: "I took off the dressings, and found the edges of the wound livid, flabby, and covered with an ichorous sanies, having a very fetid smell. The bed had not been changed for three days, and the sheets were dirty; the room was small, badly ventilated, and continually filled with people; and it was in the hottest season of the year, with the heat increased by a south wind.

"The sutures were cut; the wound covered with charpie, and the lower belly with compresses, which were frequently sprinkled with strong decoction of Peruvian bark. Tonic and antiseptic remedies were used instead of the antiphlogistics, the chief being Peruvian bark, and mineral acids.

"I changed the bed linen, sprinkled the chamber with vinegar, and disinfected the atmosphere in every way possible. At the end of some days the pulse improved, the delirium disappeared, the strength increased, and the wound discharged a healthy pus instead of sanies. The lochia, which had not appeared, began to pass per vaginam."

On the twenty-first day, the patient was doing well. The wound closed at the end of the sixteenth week. She subsequently enjoyed excellent health, bore and nursed two children, but had a small ventral hernia. (*Jour. de Chirurgie*, par M. Desault, Paris, 1791, p. 322-326.)

CASE IV.—Caudebec, Department of La Seine Inférieure, France, July 30th, 1789. Subject of injury, a multipara of 39, named Brument, pregnant eight months, who was gored by a bull, which opened the hypogastric region transversely, and the anterior part of the uterus to the extent of more than ten inches, when in the fields at a long distance from home. The fetus escaped immediately through the long laceration, and a large quantity of blood was lost. The persons who surrounded the woman simply wrapped the baby in an apron, as it was still living, and the cord unbroken, and did not cut the cord.

M. Lechaptois, a surgeon of the Commune of Lislebonne, who lived a league distant, arrived in about an hour and a half, and commenced by cutting the cord and removing the infant. The mother was much exhausted and her pulse scarcely perceptible. The doctor then extracted the placenta through the wound, the uterus being contracted and the hemorrhage arrested. He then cleaned the intestines which were covered with blood and dirt, by means of a sponge moistened with wine and water, and replaced them, closing the abdominal wound with eight quilled sutures, and covered the whole with a bandage; she was then taken home. The child died in eight hours.

The next day, Dr. Lair-Corigny, who reported the case, and was the health officer at Thorigny, was called in consultation.

The woman by this time had a small, frequent pulse, and a hard, painful abdomen; some of the sutures were on this account relaxed. Ten days later, when he saw her again, she was in a fair way to recover; there was no fever, and the wound was nearly closed. The cure was complete in six weeks. Five years later the woman was in excellent health, but had a small hernia where the two stitches had cut out.

Pigné, of Lislebonne, in his thesis, "*De l'accouchement naturel*," according to the transcription in the *Jour. de Méd. et de Chirurg. Prat.*, vol. VII., 1836, p. 417, reports that the woman was at church in five weeks; lived twenty years later, and died of a disease which had no relation to the accident. ("*Recueil Periodique de la Société de Médecine de Paris*," Tome V., p. 79-81.)

CASE V.—Villanova, Department of the lower Po, Italy, Nov. 30th, 1805. Woman 35, far advanced in pregnancy, was gored by a cow in two places in the abdomen; the first in the umbilical region with the exit of a knuckle of intestine, and the second in the left hypochondrium with penetration of the uterus, giving exit to a loop of intestine, and the left elbow of the fetus.

Dr. Francesco Duo, who was called to the case, enlarged the openings in the abdomen and uterus, and delivered the fetus and placenta. The child was dead, having received a severe contusion of the chest. The wound in the umbilical region, although carefully sutured, was followed by the formation of a large hernia. The abdomen was cleansed of blood through the lower wound, but the uterus was not sutured. The woman slowly recovered (*Giornale di Medicina*, Pavia, 1814, sem. II., p. 37).

CASE VI.—Madras, India, June 12th, 1834. "The wife of a Madras Sepoy, far advanced in pregnancy, was riding on a bullock (India buffalo) when the animal stumbled and fell, by which she was thrown forward and pitched upon one of his horns, which entered about an inch above the os pubis, penetrating into the uterine cavity. The accident occurred at a village about three miles off, at sunset, but it was 11 P.M. before the woman was brought to me on a charpoy. On examining the wound, which was about two inches long, in a horizontal direction, I found the hand of the child protruding, with slight hemorrhage and discharge of liquor amnii. The woman, by her own account and by the size of her abdomen, being near her full time, labor soon commenced on irritation of the os tincæ. The child scarcely breathed on being born, and had been injured by the horn on its neck and shoulder; it was apparently at full time.

"On expulsion of the child, considerable protrusion of the intestines followed, but was easily and speedily reduced, and the wound brought together by stitches; sticking-plaster, a compress, and bandage were applied. Twelve hours later, there was considerable pain and tenderness above the navel. The uterus was contracted to the usual size, and not particularly painful; skin

rather hot and dry, thirst urgent, pulse quick, but of good strength. Twenty leeches were applied above the navel," etc. "Next day not a bad symptom; no pain, wound nearly united, and she had merely the usual symptoms of a woman after delivery. For some days pus was discharged *per vaginam*. (Letter of Mr. G. G. Spilsbury, of Madras, to Mr. Twining, of Bengal, in "Trans. Med. and Phys. Soc.," Calcutta, 1835, vol. VII., part 2.)

Prof. James Y. Simpson, of Edinburgh, reported this case before the Medico-Chirurg. Soc., on June 5th, 1850, to the effect that the abdominal parietes and uterus were both lacerated to such an extent that the child was immediately delivered; also that mother and child did well; both which statements, in reference to the fetus, are errors. (*Edin. Monthly Jour. of Med. Sci.*, July, 1850, page 88.)

CASE VII.—The date and particulars are wanting. The fact that a woman was gored in King's Park (now Queen's Park), Edinburgh, some years before, and that she and her child were saved, under the care of Dr. John Thatcher, the grandfather of the present Dr. Charles H. Thatcher, was announced by the late Sir James Y. Simpson, at a meeting of the Medico-Chirurgical Society of Edinburgh, on June 5th, 1850, in a paper which he read upon the Cesarean Section. Dr. John Thatcher, then a practitioner of forty-five years' standing, was present and confirmed the statement that the woman was ripped open by a cow; that the child was thus delivered, and that both were saved. As he was not in the habit of publishing his cases, nothing more can be ascertained; and all searches made in Edinburgh among old residents have failed to discover any traditional account of the injury. It is remembered that the Park was used as a pasture ground by a Scotch Laird, and that some of the cattle were very fierce. (*Trans. of Soc. in Edin. Monthly Jour. Med. Sci.*, July, 1850, page 88.)

CASE VIII.—West Point, N. Y., April 5th, 1867. Mrs. F., aged 42, mother of eight children, in eighth month of pregnancy was gored by a cow when near her own house. The horn did not tear her clothes, but she felt the child drop out and caught it in her dress. With assistance she walked to the house, where it was found that her bowels were largely protruding, and the child had escaped. The cord was cut, the child removed, and an endeavor made to replace the intestines, but this failed. Dr. E. J. Marsh, U. S. Army, arrived in about three-quarters of an hour, and found several feet of intestines protruding; the uterus also; and it partially inverted through a rent, with the placenta attached to the inverted portion. The abdominal wound was about five inches long, extending from the umbilicus outward and somewhat downward on the left side, almost in a straight line.

Dr. Marsh removed the placenta, returned the viscera, and

found the uterine laceration to be Y-shaped, with one leg shorter than the other, the wound after contraction being between two and three inches in length. There was but slight hemorrhage on the removal of the placenta. The abdominal wound was sutured, and dressed with adhesive plaster and bandage. The woman was entirely conscious, complained little of pain, but was very restless, tossing her arms and rolling about the bed. She was stimulated, but failed to rally from the shock; her pulse soon became imperceptible, and in about an hour and a half after the receipt of injury, she died. The child, a boy, was not in any way injured, and was still alive two weeks later. (*Medical Record*, N. Y., vol. II., May 15th, 1867, p. 148.)

CASE IX.—S. W., Missouri, November 16th, 1879. Mrs. Piskulla, an octipara, of 34, and near her full term of pregnancy, was gored in the abdomen by an ox, the horn entering at the anterior superior spinous process of the ilium (side not stated) and making a rip to the umbilicus, involving abdominal and uterine walls. The fetus was extruded through the womb, half an hour later. When Dr. Joseph C. Scott arrived, he cut the cord; removed the child; delivered the placenta through the rent, and applied a bandage, but did not suture the wound, as the woman was almost lifeless from shock and hemorrhage. The next morning the small intestines protruded on the removal of the bandage; these were returned, the abdominal wound sutured, and a carbolyzed compress applied. The woman sank, and died at 10 P.M. of the second day. The child was living in August, 1885, "a vigorous and thriving boy," in his sixth year, having suffered little or nothing, in the violence of his delivery (*Medical Age*, Detroit, Aug. 10th, 1885, vol. III., No. 15, page 341).

Cases 8 and 9 belong to our own country, and resulted similarly, a boy uninjured being saved in each. I have now to report a third American case, which has never as yet been published, belonging to a different class, in which the horn failed to lacerate the uterus or to excite labor.

CLASS 2.

CASE I.—Near Waterloo, Monroe County, Illinois, summer of 1860—reported by Dr. A. Wetmore, January 9th, 1886, in answer to a letter of inquiry. The woman injured was strong ammuscular, about 30 years of age, and the mother of one or more

¹ In writing the play of "Macbeth," Shakespeare used the "Chronicles of Englande, Scotlande, and Irelande," London, 1577, 2 vols. fol., by Raphael Holinshed, in which Macduff is made to say: "*I am even he that the wizzards have told thee of, who was never born of my mother, but ripped out of her womb.*" If Macduff told the truth, he is much more likely to have been delivered by a horn or sword than by the knife of a surgeon.

children; she was about six months pregnant, and had been gored by a cow in the barn-yard, being "pushed and dragged about" as she expressed it.

Dr. Wetmore, then a young practitioner, residing at a distance of eight miles, reached the patient in about three hours after the receipt of injury, and found her swathed in rags, wet with a compound of solution of camphor in whiskey and decoction of tobacco, which had been applied by the attendants. These were at once removed, revealing a large protrusion of omentum and intestines which were cold to the touch, and dirty, from the manner in which she had been attacked. There being no physician of note within twenty miles, to be called as a consultant, Dr. Wetmore cleansed the intestines with warm water; pushed them aside to remove all clots and dirt; and brought the uterus into view, upon which he noticed bruised patches over the fundus and upon the anterior wall, but saw no appearance of tear; he also marked distinctly the movements of the fetus in utero, and discovered no evidences of injury to the intestines.

The intestines being replaced, Dr. W., for want of better appliances, was obliged to sew up the abdominal wound with a darning-needle and black linen thread, which he did without including the peritoneum. The wound, when closed, according to the doctor's recollection, "presented an irregular oblique line, beginning somewhere in the left hypochondriac region and ending some distance below the umbilicus: a second line, beginning in the right lumbar region, intersected the other, but whether above or below the umbilicus, I cannot now remember."

The woman having been, during the time of dressing, apparently in a state of collapse, the doctor ordered milk punch as a stimulant, and had bottles of hot water placed around her, directing the punch to be given in small doses, as she was much nauseated and occasionally vomited.

Dr. Wetmore gave directions that he should be sent for, if any pains of labor occurred; but fully anticipated the patient's death, and expressed his expectations to the family and inquiring neighbors. Fortunately, he was in error, as the woman rapidly recovered, and bore a healthy child at the full maturity of her gestation.

CASE II.—February 25th, 1863. Uckamah, a pregnant woman in the sixth month, was attacked at 4.30 P.M., by a buffalo, thrown down, and gored in the abdomen. She was carried to the Guntoor Dispensary, where at 10.30 P.M. she came under the care of Mr. Crowdace, who found nineteen inches of intestine protruding through a rent of $1\frac{1}{2}$ inches long, alongside of the umbilicus, and reaching about half an inch above it. After about twenty minutes' *taxis* the intestine was returned, where an introduced finger distinguished the fundus uteri about half an inch below the umbilicus. Pulse after operation 84, respiration 20. Opium treatment employed.

February 26th. Tongue clean, pulse 82, no febrile symptoms.

Considerable tension in umbilical region. At 6 P.M. cut a suture, letting about 3 fl. drachms of serous fluid out.

Feb. 27th. Copious serous discharge in the night attended with much relief.

Feb. 28th. Slept well all night. March 1st, pulse 78, skin cool. March 5th, fetal heart distinctly heard on right side of abdomen, midway between umbilicus and right ilium. Discharged from hospital on March 20th; fetal heart again heard a few days before (*Madras Quarterly Jour. of Med. Sci.*, Vol. VII., 1863, p. 409).

The buffalo of India is particularly given to "pushing with his horn," as witness the fact that Mr. W. N. Chipperfield treated twenty cases of laceration of the abdomen produced by them, in Vizian Agrum, from May, 1856, to September, 1858 (*op. cit.*, vol. 5, 1862, p. 252). All of the patients were males, between 12 and 40, and only one, a middle-aged man, died. From this frequency, no doubt many women among the millions of India have been gored during the pregnant state.

CASE III.—January 27th, 1876. Van Buren, Indiana; under care of Drs. L. and L. J. Corey. Woman injured was the wife of a farmer, and in the third month of her pregnancy. She was 35 years old, athletic, and weighed 135 pounds at the time of the casualty. A vicious cow gored her in the lower part of the abdomen, bore her for some distance upon the horn, and then tossed her upon the ground, producing an extensive laceration and great intestinal protrusion. Rescued by her husband, she was carried to the house, and medical assistance summoned. The Drs. Cory reached her in about an hour and a half, and found her with a frequent but feeble pulse, hurried respiration, and affected with almost constant vomiting; but at the same time perfectly composed, and not manifesting the least alarm in regard to her desperate condition.

The abdomen had been penetrated by the horn, at a point about an inch and a half to the right of the median line, just above the os pubis, and from this, a lacerated wound had been made in an oblique direction upward, to a point an inch to the left of, and on a level with the umbilicus, and about five inches in length. Through this rent protruded the omentum; the ascending, transverse, and descending colon; most of the small intestines, and the pyloric extremity of the stomach. The omentum was much congested; had two lacerations of two inches each, and was besides much mangled, so that portions adhered to the fingers in handling it. The intestines did not appear to have been much injured.

Additional counsel was sought, chloroform sent for, protruding parts cleansed, and attempts at restoration made; but the abdominal tension prevented the return of the intestines until the

patient had been placed under the full effect of the anesthetic, when the parts were finally restored, some four hours after the injury, and the rent was closed, after trimming off its tattered edges, by eight silk sutures, supported by adhesive strips and a bandage.

The patient recovered from the chloroform without nausea or vomiting, and was placed under the influence of morphia. The next morning, less than twelve hours after the dressing, pulse 70, respiration 25, temperature 99°. On the second morning, pulse 68, respiration 18, temperature 99°; slight tympanites, and little tenderness. Evening condition, 69—20—and 99°. Patient had no unfavorable symptoms during her recovery; fair appetite on fifth day; bowels opened on eighth; four sutures removed on ninth, and remainder on tenth; union by first intention except at point of entrance of the horn.

This woman was delivered of a well-developed female child, on August 18th, 1876, being 202 days after the casualty, and both were in excellent health in May, 1878, when the case was reported by Dr. L. Corey who attended her (*American Practitioner*, vol. XVIII., 1878, p. 151-154).

What more convincing argument can be produced to prove that the Cesarean operation is made as fatal as it is, by "meddlesome midwifery," than what I have shown to be the results in nine cases of cattle-horn laceration of the abdomen and uterus in pregnant women when in the full possession of their usual strength and health?

329 S. 12TH STREET, PHILADELPHIA, May 2d, 1887.

THE DRY TREATMENT IN GYNECOLOGY. PRACTICAL DETAILS: THE REMEDIES, THEIR USE AND APPLICATION.

BY
GEORGE J. ENGELMANN.
St. Louis.

(Concluded from p. 561.)

OTHER purposes are accomplished by the tampon, but although they are rarely of sufficient importance to afford, in themselves, indication for its use, they always result in a greater or less degree in accordance with the nature, number, and placing of the tampons.

4. *Rest giving*, as an intra-pelvic splint. Tampons as used

in the Dry Treatment prevent the wobbling about of the heavy, enlarged, or displaced parts, and serve as a splint to the diseased tissues, reducing their movements to a minimum. They thus serve to steady, to splint the pelvic viscera, and give them rest. The treatment itself necessitates what the orders of the physician often fail to attain, what the patient may not be able to give—rest, which is as needful to a diseased uterus or ovary as to a broken arm or a recently united wound. The tampon affords that rest which I look upon as one of the most important elements in the treatment of uterine disease.

5. *Cleansing.*—The tampon itself, like the dry bismuth powder, furthers cleanliness by absorbing the secretions, and when rendered aseptic by impregnation with corrosive sublimate, salicylic acid or similar preparations, it prevents fermentation and disintegration of fluids and thus does much to further healthy conditions, irritation and inflammation being frequently kept up and aggravated by such discharges; like the dry powder, it thus relieves many of the distressing symptoms occasioned by excessive acidity of the vaginal discharge. The parts are kept dry, clean, aseptic; the tissues are surrounded by healthy conditions and healthy action is thus furthered.

6. *As a protector.*—Whatever object the tampon may be intended to serve, it will protect the parts against irritation by friction and pressure from adjacent organs, and what is equally important, from the effects of cold, from changes of temperature. The friction of sensitive, congested, or displaced parts against each other is prevented and great relief thus afforded. The insertion of the tampon for purposes of medication or support at once removes the inflamed or eroded cervix from the vaginal wall against which it grated at every step, with every movement of the body, a constant source of suffering and irritation; the tampon is interposed, holds the parts in their proper position, and prevents friction. To a certain extent the parts are protected against insult from without as well—this treatment prevents coition and forces the patient to afford herself the much-needed rest in a matter upon which the physician may dislike to speak, and in which his directions are most likely to be disobeyed. In this respect the tampon renders a most excellent service, as the congestion accompanying coition and the mechanical injury caused thereby do much to keep up existing irritation, and to excite or aggravate inflammation, and often

cause most intense suffering. Only in extreme cases does the physician, as a rule, interfere, whilst in all abstinence does much to promote the restoration of health. The dry treatment enforces abstinence without the necessity of discussing this delicate topic. The tampon in the vagina, like the cotton wad in the ear, is a good protector against cold, although at the present day, in this era of modern conveniences, one of the most fruitful causes of injury has been removed with the introduction of the water closet; the poorer classes and country women all still resort to the privy, where vulva and vaginal tract are directly exposed to the cold, often to perfect blasts. The mere exposure of these parts to such drafts as often exist in privies is injurious, above all when rendered sensitive by pre-existing inflammation, and in multiparæ with relaxed vaginal walls, and ruptured perineum, the pelvic viscera are directly exposed to the cold draughts from below, as the vagina is then an open canal. Ladies better situated are not so much endangered from this source, but from the very nature of their dress are more or less exposed to cold. The tampon as used in the Dry Treatment protects the vagina and internal parts.

7. *As a supporter for instruments and appliances.*—In the dry treatment we use one tampon, at times, to fix and hold in place another; or use it for the retention of a medicated pencil *in the uterine cavity*.

HOW THE TAMPON IS USED.—As the Dry Treatment is not only non-irritating, but at once affords the patient immediate relief from the more annoying symptoms and gives her support, it may be applied in the office just as well as at the home of the patient. For one purpose or another I use the tampon in *all* cases. To obtain the best possible results, its use must be almost continuous, hence the treatment should be repeated every second or third day: after the treatment—the placing of the tampon—the patient should lie down for half an hour in such position as is indicated by the existing morbid conditions; in a case of retroversion, where the tampon is placed behind the cervix, underneath the fundus, the position should be lateral, semi-prone, so as to remove the pressure of the intestines and allow the uterus to fall well forward, the tampon to settle itself firmly in the posterior cul-de-sac in the hollow of the sacrum, and the viscera to accommodate themselves accordingly. If this is done the effect of the tampon is more certain, the parts

more liable to retain the position given them by the physician. But before the patient leaves the office, she must be told of the fact that the tampons have been placed, how many, and how long they are to remain, when she is to remove them, and the precautions which are necessary for such removal. She must be told to lie down immediately after treatment, before going home, how long, and in what position ; she must also be directed as to the position she is to take in bed at night. Should iron cotton be used in treatment, the patient must be advised of the possible discolorization of the discharge and the staining of clothing, against which she may guard by the wearing of a cloth. If the tampons begin to give discomfort, the patient must be instructed to make an effort to push them upward with the finger, and to assume the proper recumbent position for a time, when the previous position of parts and tampons may again be attained, but if the tampons have become displaced and cannot be returned so as to give comfort, they should be at once removed, as irritation will be caused by the cotton when low in the pelvis where it presses upon urethra and rectum. The patient must also be cautioned against the possibility of displacement of the dressing during a movement of the bowels, after which the same attempt at reposition must be made. She should always be instructed to remove the tampon if it causes pain or even discomfort, as *a well-placed, effective tampon will never inconvenience*. It is immaterial whether the tampons are placed in the morning or evening of one day ; they can always remain at least until the evening of the next day, and remain perfectly sweet, as the treatment is aseptic or antiseptic, and antiseptics are always used on one or the other of the tampons inserted. The tampons, if important for purposes of support, should be left in until within a few hours of the following treatment ; but when the vaginal douche forms an important element in the treatment, they are removed upon the evening of the day following their insertion, so that the douche may be used upon the evening after their removal, and again upon the following morning. If support is the important factor, they are not removed until the following morning or afternoon, only a few hours before their removal of treatment, or even retained until removed by the physician himself before treatment. The patient should be as short a time as possible without them. I leave them in as long as possible to afford support, or to permit the effect of medication to continue

as long as possible. Any exertion the patient must undergo should always be undertaken while she has the benefit of the support afforded by the tampon. After it has been removed, before the re-insertion at the next treatment, she must keep quiet, rest in the proper recumbent posture.

In my clinic at the Post-Graduate School, the hours of treatment are from 10 to 12, and as a rule the tampons are left in place until the following evening ; in cases where support is very important, until the day thereafter, for forty-eight hours, when they still remain free from any odor, although somewhat matted and with a doughy surface from the discharge absorbed. The abundance of antiseptics used in the treatment, either in the powder or the substance of one or other of the tampons, preserves them perfectly for two days. In private practice I utilize the afternoon hours, and there tampons are as a rule allowed to remain for thirty-six hours, from the afternoon of one day until the evening of the next. Where it is not possible for the patient to receive treatment as often as necessary, she can be instructed to place tampons, medicated or carrying dry powder, upon the morning of each day, so that a certain support is afforded while she is on her feet ; although the same object is not accomplished as when placed by the physician, I have found very good results where a simple support was necessary, and even in cases somewhat more intricate, I have found that ladies become adept in the use of the tampon as they do in the dressing of some chronic sore, which they have long practised upon themselves. The relief afforded by tampons varies so much with the method of placing them, that they soon find out by experience where the tampons must be placed, how large they must be, and how many must be used. When the patient places the tampon herself, she must, of course, use them small, elongated, as they are more readily inserted. She must be carefully instructed how to make and how to insert them ; they are to be inserted in the knee-elbow position if they cannot be managed in the dorsal decubitus, and carefully pressed against the posterior vaginal wall, forcing the perineum back, and then brought backward and upward, the first behind the cervix, and then upward against the fundus, the next following it as close as possible. Patients who cannot learn to manipulate the tampon may use the vaginal gelatin capsule, putting the powder for medication into the capsule upon the tampon; these are more handy, but much less efficacious, as they can-

not be so accurately adapted. I have frequently seen great improvement in such patients after returning from a summer vacation, or a few weeks' absence, during which time they have not only afforded themselves relief and comfort, but have even improved their condition by the continued use of properly placed tampons during the daytime, and by the douche in the evening and morning.

We must begin cautiously with the dry treatment as with all others, idiosyncrasies may exist; powders or cottons may not be borne, and in almost all cases, certainly in sensitive patients, repeated treatment is necessary before the parts become thoroughly accustomed and adapted to the tampon, and improvement is felt. If we desire at once to attain the full effect, more or less irritation will be produced; hence the first treatment must be mild both in regard to medication and mechanical effect. We must not seek to fully replace and hold the displaced uterus at once, but we must be satisfied with some little change for the better; small tampons mildly medicated. In nervous patients with sensitive organs, in cases of cellulitis and metritis, treatment should be inaugurated with all possible precautions: I have sometimes used cocaine to cervix and cul-de-sac. I generally use bismuth or iodoform with small borated tampons; should the tampon cause irritation, let the patient remove it if it becomes annoying, even before the expiration of thirty-six hours; gradually the parts, by pressure and medication, grow less sensitive, a slight amelioration of the condition takes place, and the treatment is borne without discomfort; ere long the improvement becomes marked, increasing day by day. In rare instances, I have seen a few weeks thus consumed. In many cases, a little discomfort is felt during the first two or three treatments, but this is only in the more sensitive; in most the improvement becomes apparent at once and is sensibly felt by the patient after the second treatment. If the tampon annoys, it is better that it be removed, it may be mere hypersensitiveness of the parts, the tampon may not be properly placed, as it is not a simple matter and it is sometimes after repeated trials only that the proper number, size, and position of the tampons is obtained. This is another advantage over the pessary, the possibility of a *gradual* return to the normal condition. The first tampons may annoy somewhat even when properly placed, because the parts, having become adapted to their malposition,

forced upon them by morbid conditions, are disturbed in their relation, and only by degrees again accommodate themselves to the normal, hence we must proceed slowly, and under no circumstance should pain be caused.

What the tampon is.—The tampon, as I use it, is perhaps the simplest of all the numerous forms of tampons which have been recommended, and I would here say that many of them should be carefully avoided; no peculiar shape or manner of wrapping is recommended. To be serviceable, easily placed, and well retained, the tampon must not be large; it must not be hard or too compressible. The tampon should be oval, from two and one-half to three inches in length, from one to one and a quarter in diameter. It should neither be flat nor conical, or a hard mass of rolled cotton; nor should it possess that firmness which is lauded by some for their particular tampons. The cotton or wool of which the tampon is made should be loosely picked, then taking a bunch perhaps the size of an egg, a string seven inches in length should be taken, one end of which is tied around the tampon sufficiently tight for it to become imbedded in the fibre of the cotton and nowhere visible. It must not be tied too tight lest the elasticity of the tampon be impaired, yet it must be sufficiently firm to hold firmly and be imbedded, that the string itself is nowhere exposed so as to come in contact with the vaginal tissue. One end is cut short, the other, five inches in length, is left pendent to secure the tampon. The string should not be coarse, it should not be colored, lest the perspiration or secretions become tinted and stain the clothing; the string must be soft, as irritation is readily caused in tissues so sensitive as the mucocutaneous borders by the friction of a coarse cord, and in very sensitive patients, even a soft string is liable to cause irritation. The pendent portion should not be more than five or six inches in length; long enough to protrude from the vagina, yet not so long that it becomes entangled in the clothing and liable to be disturbed and dragged down; still it must be long enough to avoid the danger of its being drawn up into the vagina so that the patient herself is unable to remove the tampons.

The largest tampons I use are three inches in length by one and a quarter in diameter; the smallest about two and a half inches in length by one in diameter, the fibres are packed so as to give the tampon sufficient firmness and still preserve their elasticity; it must not be a hard incompressible mass, though

firm, elastic, the peripheral fibres quite loose. As the elastic fibre of wool or jute is often too harsh to come in contact with the tissues, yet on account of its elasticity desirable for support, I use this material for the body of the tampon and then cover it with a thin layer of medicated or antiseptic cotton, using for supporting tampons the more harsh but elastic fibre for the body of the tampon; the soft medicated substance for the covering. The smallest size tampon should always be used for an elastic body over which the covering is placed, so that the tampon when completed may not be too large.

Placing of the tampon.—As a rule, I use the bivalve speculum with the patient in the dorsal decubitus. For certain purposes, for the correction of a retroversion, the semi-prone position and Sims' speculum is preferable: in extreme cases even the genu-pectoral position, so that gravity, traction of the intestines, pressure of air, all add to further reposition of the organ before the tampon is inserted. After such treatment as the case may demand, to the endometrium, by fluid, powder or pencil, or the use of the electric current, all secretions are removed, the vagina is thoroughly dried with absorbent cotton, the cul-de-sac and cervix coated with the remedy desirable in powder form, the tampon is seized with a long broad-bladed dressing forceps, which grasps it about the centre, and the part to be sustained is pressed gently towards its natural position by the tampon. Frequently it is desirable to raise the vaginal vault, especially the cervix, so as to admit of proper placing of the tampon; in retroflexion or anteversion, for instance, where the cervix points backward to the hollow of the sacrum, the posterior lip must be seized with the tenaculum and raised upwards sufficiently to admit the tampon to be lodged behind it. When once in the proper position, the forceps are removed and whilst the cervix, or other part in the way, is fixed by the tenaculum, the tampon is pressed in place by the dressing forceps, the ends of which are separated about half an inch so as to afford a better surface for pressure. In inserting the tampon, we must always be careful to grasp it so that the string remains pendent, hanging out of the vagina; if the end should slip back into the vagina, it is seized with the dressing forceps after the tampon is placed and brought well out. In the placing of second and third tampons, it is well to make traction on the strings of those previously inserted, so that they may not be pushed upwards and

lost. According to the object desired, the following tampons are placed and pushed upwards against those preceding, more or less firmly where support or medication is desired, so that the entire mass of tampons represent one elastic body. Under no circumstances must the tissues, especially the vaginal walls, be distended (except for compression and in the packing of the vagina post partum for hemostatic purposes). The tampon should find its main support in the hollow of the sacrum and upon the floor of the pelvis, but never low down toward the vaginal orifice, where either rectal or urethral passage will be compressed or irritated. The proper placing of the tampon with Sims' speculum is somewhat difficult, as the natural relation of the parts is greatly disturbed, the vagina distended, and the placing of all but the first tampon rendered extremely difficult, unless very light traction is made upon the speculum and the blade gradually withdrawn as the lower tampons are placed. In the treatment with the bivalve speculum, it is likewise often well to withdraw the instrument as the lower tampons are being placed, if such are called for. When the tampons are well in place, they are firmly fixed by the slightly distended blades of the dressing forceps, with which firm pressure is made against the lowest tampon whilst the speculum is withdrawn. After the tampon is placed, the patient takes a few steps to test the effect, whether relief of pain is given, then she lies down for a quarter or half an hour in such position as insures the retaining of the tampons and pelvic viscera in the position given them by the practitioner. Before leaving the office, she must be given to understand the nature of the treatment, the presence of the cotton balls, with full directions for her guidance; that she is to do her work or undergo such exertions as are necessary whilst the tampons are in place; that they are not to be removed, unless causing irritation, until the evening of the day following, before going to bed or just before coming again for treatment. The removal must be accomplished with some precaution; unless this is taken, the string may tear and the tampon remain incarcerated; or by a rude removal the parts, which have just been a little bettered in position, will be dragged down with the tampon and pain and even injury caused. Supporting tampons are often made of astringent material or coated with such, and even when medicated tampons are used the lower one is generally astringent, so that the vaginal walls

are contracted and the tampon is more firmly fixed, hence it is well that they be moistened with a little warm water, or a quantity of vaseline be inserted so as to lubricate the parts before removal, then the string is seized as near the tampon as possible, to make traction more steady and less liable to break the string, and by slow and steady traction in the direction of the pelvic axis, as in the use of the forceps, she draws out the tampon. Generally the two or three tampons used, soaked with the discharge, have become united, agglutinated, and are drawn out as one mass, though traction be made upon but one string. In cases where special care is necessary, the string of the lower tampon is marked by tying a single knot in it, the second by tying two knots in it and so on, and the patient is instructed accordingly, so that she may draw out the lower one first, which makes extraction much easier and less liable to draw down the parts, as will happen when a number of astringent tampons are drawn out together which drags down the parts, gives considerable pain until the patient lies down for a while in the proper position so that the parts may somewhat resume their natural posture, and then uses the hot douche.

The patient must also be told that even should she not be able to remove one or two of the tampons, no harm is done: otherwise she may cause herself great annoyance and discomfort, and much nervous irritation by futile attempts at removing them if the string should happen to slip into the vaginal canal. Yet I frequently find patients who have been under treatment for some time, who have learned to remove the tampons without trouble, even if the string has escaped, by hooking the finger over the body of the tampon and so bringing it down. A tampon left in place by the patient is very easily removed by the physician when she next comes for treatment, either by the finger alone or by the forceps through the speculum. If by the hand alone, the tip of the index finger, or index and middle fingers, inserted into the vagina, is placed above the centre of the tampon if it cannot be hooked over it, and it is then pressed down into the hollow of the sacrum as we do the placenta, and by simple pressure downwards and forwards, forcing the mass against the inclined plane of the sacrum, the tampon is readily delivered. The physician must not attempt to seize it with his fingers any more than he would a placenta, but he must deliver it by pressing it downwards against the sacral plane.

THE USE OF THE TAMPON FOR SPECIAL PURPOSES.

The material, and to some extent the size, not the shape of the tampon, varies with the purposes it is to serve: the oblong tampon, adapted to all cases, is small compared with the size of tampons generally used; the largest should be three inches in length by one and a half in diameter, the smallest two inches in length by three-quarters of an inch in diameter, averaging two and one-half inches in length by one and one-quarter in diameter. Even in simple cases, I prefer to use a number of small tampons, as they are more readily adapted and more precisely fitted; I never use a large tampon, which is an unwieldy, clumsy, and useless, if not dangerous, application, extremely crude. In some few cases, perhaps a single large, oblong tampon would answer as well where it is simply desirable to support an enlarged uterus, somewhat low in the pelvis, or to strengthen relaxed ligaments, or to medicate in a simple case; but, as a rule, it will be found far better and more convenient to use several small tampons, each of which may perhaps serve a particular purpose, yet acting together, combine to further the end in view as one, by pressure, support, and medication. Tampons in the Dry Treatment generally serve a variety of purposes, and one and the same tampon is often so used; but, for whatever purpose used, we must always bear in mind that they must not form a mass sufficient to distend the vagina, and that they must find a support upon the posterior vaginal wall, the lowest portion against the perineal body, and must not protrude into the vulva, where they would irritate and annoy by compression of rectal and urethral orifices; the pelvic floor is the point of support, and the perineum is almost as necessary for the retention and proper placing of the tampon as it is for the pessary.

1. *The medicinal tampon.*—The tampon for *purely medicinal* purposes should be of medium size and of such cotton as answers the particular purpose; in case of a light catarrhal inflammation, alum or tannated cotton, seven and a half per cent, may be used, and two tampons of this cotton inserted; if the astringent effect of the iron cotton (perchloride of iron, ten per cent) is desired, a thin layer only must be used, taking a small tampon of wool, jute, or cotton with an antiseptic, as a body around which a thin layer of iron cotton is placed. The same is true of iodized cotton; in cases of chronic cellulitis or metritis, in which

we wish the iodine effect, we do not use the solid tampon of iodized cotton, unless the blistering effect is desired, but take a small body tampon of antiseptic cotton or jute, around which a layer of iodized cotton is placed, more or less heavy according to the effect desired; a more effective iodine tampon is one in which the body is made of iodized cotton, and this is surrounded by a heavy layer of plain absorbent cotton, sufficient to prevent contact with the mucous membrane, yet admitting of the slow penetration of the volatile iodine. Such a five-per-cent iodine tampon, when removed on the second day, comes out perfectly white, proving the complete absorption of the remedy. The quantity of medicated cotton to be used depends upon its strength, the condition of the mucous membrane, and the purpose for which it be used. Where we wish but a light iodine effect, non-irritating, not blistering, we must use a small mass of iodized cotton in the centre of the tampon. Likewise in very sensitive subjects; in such, a layer of iodized cotton, not thicker than the back of a knife blade, surrounding the tampon, may produce a burning which continues whilst the tampon is kept in place. To avoid these possibilities, it is better always to use the iodized cotton as body in the centre of the tampon. We must bear in mind that one of the great advantages of this treatment is in the comfort it gives and its continued effect; hence we should not resort to strong remedies and irritating methods of application, unless a special purpose is in view; we must be careful as to the quantity of the iron used. Borated cotton, fifteen per cent; tannated cotton, seven and one-half per cent, may form the body of the tampon, but iodized cotton, even five per cent, must never, unless a blistering effect is desired, be used for the entire mass of the tampon; ten per cent alum cotton is even too severe for some to be used in quantity; the milder of the iron cottons made by Am Ende, hemostatic ten per cent, used too freely excoriates and affects the surface precisely as a solution of perchloride of iron would; of such cotton, I take a thin layer, three inches square, and surround with this the small tampon which serves as a body. Unless a secondary purpose is in view, an antiseptic material should always serve as the body. In rare cases where a powerful effect is desired upon a small surface, as upon the bleeding and everted lips of a lacerated cervix, the styptic cotton, sixty-six per cent of perchloride of iron, is used, the part to be affected is covered

with a thin layer which is held in place by an astringent tampon of alum or tannin; if a more general effect is desired, a number of tampons, consisting of a mild medicated cotton, are inserted. Where the effect is to be localized, as upon the cervix or the vaginal vault, this one medicated tampon is held in place by a second which consists of wool or cotton coated with an astringent as we shall hereafter see. Tampons of medicated gauze may be used for purely medicinal purposes, and are especially useful for purposes of vaginal dressing after surgical operations. Strips of this material may even be used in the uterine cavity, both for drainage and medication.

2. *The supporting tampon.*—The tampon for support consists of elastic non-absorbent material, hence best of wool, jute, or oakum, that is preferable which can be impregnated with antiseptic preparations. There is more or less discharge, either from the vaginal or uterine glands in cases which come under treatment, hence an elastic non-absorbing fibre should be used for purposes of support. In its elasticity lies the advantage of the tampon for such purposes. The sensitive and inflamed uterus, the irritable, diseased ovary, or the vaginal walls, are best supported and held in place by an elastic mass, and there is nothing better than wool for this purpose, after this jute, oakum, or cotton. It should, of course, be aseptic, if not antiseptic. Of late, gynecologists have fallen into a serious error by using absorbent cotton for such purposes, with the best intentions, thinking to give their patients the benefit of this most elegant and agreeable preparation, that have rendered them a bad service; the absorbent cotton soon becomes impregnated with the discharge and forms a small, hard wad and patients tell me that, whilst the tampon gave comfort for half an hour, it then felt uncomfortable, causing irritation like a foreign body. The absorbent cotton so matted and solidified and greatly reduced in size forms a support very little suitable for a diseased organ; ordinary cotton is far preferable, because it resists much longer. Fine sheep's wool is best; it is elastic, soft, but not antiseptic, hence, if we use it, it must be impregnated with borax or iodoform. The same is true of ordinary cotton which makes a fair supporting tampon, though not as good as the more elastic fibre of wool which I use almost altogether. The fibres of jute or oakum when used for a supporting tampon must be picked and loosened,

so as to form a soft elastic body; but as this is too irritating for the tissues, the tampon so formed is coated with a thin layer of a finer fibre, with a medicated or antiseptic cotton. Unless special indications exist, it is well to coat the elastic body of the supporting tampon with a thin layer of a light astringent cotton, which serves to contract the vaginal walls and hold the tampon firmly in place. When it is desired to apply a certain remedy to the tissues, the elastic body of the tampon is coated with the medicated cotton to be used; thus where an astringent effect is desired, a thin layer of tannated cotton serves to soften and at the same time medicate; iodized, iron, borated cotton, may be so used. In holding in place the body of an enlarged uterus, held down by ligaments tense and thickened by chronic inflammations, the supporting tampon is coated with a thin layer of iodized cotton, thus attaining the desired medicinal effect whilst proper support is given.

The tampon for supporting purposes must be placed with as much care as a pessary; if not, it will either not answer the purpose or even give discomfort and do injury. The first tampon may be used to push the part it is to support in place. As it is caught upon the end of the dressing forceps in the right hand, the tenaculum held in the left hand is often useful in opening a path by holding aside such tissues as may obstruct. Thus in case of a retroflexion where the cervix presses upon the posterior vaginal wall, this is held up by the tenaculum which grasps the lower lip, whilst the tampon is forced against the fundus, pressing this upwards. Each successive tampon must be placed so as to afford the best possible position for the tissues, approximating the normal. When all have been placed, the tampons form a mass which rests upon the posterior vaginal wall and the upper portion of the perineal body, not sufficiently low to approach the vaginal orifice. Immediate relief is gained, friction is prevented, the normal relation of the parts is approximated, the circulation rendered more free, and absorption thus furthered.

In case of antelexion, a small tampon is placed behind the cervix in order to afford a fulcrum for the pressure exercised by the second placed in the anterior vaginal vault against the fundus, and a third, sometimes a fourth, larger one which holds them both in place. A single large tampon never answers the purpose, as it cannot be so accurately fitted. The supporting tampon, when used for the ovary or the uterine fundus

only, must itself be held in place by others which rest upon parts more fixed; these should consist of an elastic body coated with a light astringent.

For most purposes, the dorsal decubitus with a bivalve speculum is preferable, because we see before us the normal relation and condition of the parts. In case of retro-displacement of a non-adherent, freely movable uterus, the semi-prone or genu-pectoral position is preferable because the organs may then be thoroughly anteflexed or anteverted before inserting the tampons. Much judgment is necessary, however, in so placing the tampons, and care must be taken to distend the vagina as little as possible with the speculum, as it is almost impossible to find, in this altered and unnatural position of the parts, the proper resting place for the secondary supporting tampons, and it is by no means intended to attain reposition and support by distention; the greatest judgment, however, is necessary to determine the plane of the pelvis to which the organ should be raised, the extent of the effort at reposition to be made at each application. If adhesions exist or the circum-uterine tissues are rigid by induration, injury is done, pain is caused, and inflammation excited by forcing the parts, by attempting perfect restoration, or by aggravating the malposition by improperly placed tampons. For individual cases it is impossible to prescribe: I can only say that the tampon should never support by distention; that it must act more like the properly placed pessary, by leverage; it must neither cause undue tension, nor discomfort, but should, on the contrary, give relief; small tampons of elastic body should be used, coated with soft fibre of prepared cotton impregnated with a mild astringent or antiseptic preparation, or medicated to suit the purpose. So used the supporting tampon is in every sense of the word curative; as the treatment is continuous, normal conditions are more and more approximated, the relative position of the parts is resumed and consequently the circulation is improved from the very first. In this treatment, even in those cases in which the medicated tampon is used, the dry powder precedes the tampon; where the supporting tampon is used alone, in displacements due to relaxation, the astringent powder is in place to strengthen the parts; for morbid conditions accompanying displacements such powder as seems best under the circumstances is applied.

The medicinal and supporting tampons are the ones most

commonly used and most serviceable. The fact that a displacement, not only of the uterus, but of all of the pelvic viscera, almost invariably accompanies morbid conditions to a greater or less extent, at once points out the advantage of this treatment, by which medication and reposition are made possible at one and the same time, and support is afforded during the continuance of medication. The supporting tampon prepared of antiseptic material, aided by antiseptic powder, may be left in place for twice or thrice twenty-four hours, although its best effect is during the first thirty-six hours; simple wool or cotton not medicated soon becomes offensive; in ordinary cases treatment is repeated every other day; the tampon is removed a few hours before treatment and the hot douche used. In cases in which frequent applications are not possible, the patient, when properly instructed, soon learns to place the tampon sufficiently well to afford a certain amount of comfort at least, if not complete relief. When so used it should be inserted in the morning before the patient leaves her bed, in order that the organs may be in the best possible state before the parts are irritated and displaced; it is removed at night before the use of the douche.

3. *Alterative and Absorbent.*—The tampon is to the pelvic viscera what the elastic bandage is to external parts, and the importance of the tampon, acting by reason of its elastic pressure, will be best appreciated when we remember that the tissues, in the great mass of cases, and the most trying cases which come under treatment, are in a state of passive congestion—of venous hyperæmia—doughy, thickened, infiltrated, conditions accompanying all chronic inflammations, especially chronic cellulitis. But in addition to the hyperæmic, œdematous, conditions due to disease of the pelvic viscera direct, there are those which are due to stagnation of circulation from morbid conditions in the larger viscera—in the liver, in the intestines. The excellent results of pressure from the elastic bandage externally used are well known, and the success of Taliaferro's cotton-wool treatment upon the pelvic viscera is by no means too highly lauded by the ingenious author. Taliaferro, however, formerly packed the vagina almost to distention with cotton wool; whilst now he has refined and modified his treatment, using merely small balls which he packs in the cul-de-sac around the cervix, supporting them by larger ones. Pallen accomplished the same object by filling the vagina with clay. I have never found it neces-

sary to pack the vagina so full as described by Taliaferro, and consider it advisable only in rare cases; as a rule other conditions which are better overcome by the supporting or medicinal tampon, accompany and perhaps determine those for which the tampon is used, hence we have other objects in view as well.

The tampon for alterative purposes purely should be like the supporting tampon, small and of elastic body, but coated with an astringent. This I deem the important feature and the one which in my treatment does away with the necessity of distention. The astringent remedy, used for covering the tampon, serves to contract and strengthen the vaginal walls and to contract the vessels, thus aiding pressure; the cure is more rapid and less trying to the patient. So used, the alterative or stimulating tampon does not annoy as the packing would, but at the same time furthers a healthy state by reposition and medication.

For alterative purposes only, the elastic tampon coated with astringent cotton is used, after dusting the cervix and vaginal walls with a mild astringent powder; the small semi-circular tampon is placed in the cul-de-sac anteriorly and posteriorly to the cervix, supported by several larger tampons, firmly packed, but not distending the tissues. I have rarely had occasion to use the tampon for this purpose alone; wherever it is called for, medication and support should be utilized in the tampon which is to serve this purpose. We invariably attain a moderate amount of pressure in the dry treatment by the simple presence of the tampons for whatever purpose they may be used. This together with the following is one of the many advantages which invariably accompany, as a mechanical necessity, the use of the tampons in the dry treatment. When used for the purpose of support it invariably exercises an alterative and stimulating effect; when used for medicinal purposes the same object can readily be attained by using the elastic astringent tampon as a support for the medicinal tampon, or by using a number of tampons with elastic body covered with a medicinal agent. Thus sufficient pressure is exercised to attain the object.

To appreciate the alterative effect of the tampon the result must be seen: the bluish, edematous, and enlarged cervix of a retroverted hyperplastic uterus, pressing upon the rectum, dragging down with it the vaginal walls, as it appears when the tampon is placed, will not be recognized forty-eight hours later, when this is removed: the swelling has disappeared, the

cervix is smaller, pale, especially the mucous membrane has lost its succulence, and the vaginal and cervical mucosa appears thin and pale, the edematous swelling has completely disappeared. I have not in vain compared the effect of the tampon so used to the elastic bandage; it may be made to be fully as effective.

The physician will rarely find it necessary to use the tampon alone as an alterative and stimulant; if he follows out the dry treatment, and properly uses the tampon for medicinal and supporting purposes, he will soon overcome these conditions by reason of the mechanical effect exercised by the astringent body of the tampons used; the alterative tampon may be made to serve at the same time as a splint and rest-giver, an antiseptic, cleanser, and protector.

4. *As a splint and rest-giver.*—The tampon should be like the supporting tampon, of elastic body covered with an antiseptic, used together with bismuth or an antiseptic powder.

5. *As an antiseptic, cleansing and absorbent agent.*—If used for this purpose alone, we should, of course, always use an absorbent antiseptic cotton, and where there is much discharge this is desirable. But the tampon, for whatever purpose used, accomplishes this to a great extent: it is one of the advantages afforded by the treatment usually resorted to for more important objects. In some light cases of profuse discharge, in case of purulent secretion or disintegrating malignant growths, we use the tampon for this purpose direct. It is then made as large as possible; of an antiseptic absorbent cotton and frequently changed.

6. *As a protector* against the friction of parts, and against cold, the same soft antiseptic tampon is used, but for the first-mentioned purpose it should be made with an elastic body.

7. *As a support to instruments or remedial agents.*—In the dry treatment the tampon is often used to hold a medicinal or supporting tampon in place, and for this purpose it should be of medium size; one or more can be used: of elastic body with an astringent coating, which serves to fix it in place, causing a certain adhesion by the contraction of the vaginal walls in contact with the agent. A thin layer of iron cotton answers the purpose admirably; but in its prolonged use care must be taken to have only a thin film, as excoriation will otherwise follow if any pressure is made for a length of time upon one and the same place. Of alum cotton a heavier layer may be

used, as the strongest of this contains only 10 per cent of alum. I might here add that where iron or iodine-cotton is used it is well to caution the patient with a profuse secretion against the possibility of staining her clothing and to advise her to wear a cloth, as the discharge, after saturating the tampon, carries away with it part of the medicinal agent used, and causes a slight stain in the clothing. This is the only disagreeable effect accompanying the dry treatment and is very mild indeed compared to the annoying accompaniments of other methods of treatment.

The tampon used to hold in place the medicated or supporting tampon should find a rest upon the floor of the pelvis, and, to be effective, must reach beyond the perineal body. For this purpose a larger tampon may be used, but as the physician who engages in this method of treatment has on hand a number of the medium size tampons almost invariably used, he will do as well to use several of them in place of one larger one.

We may also use the tampon to hold in place the intrauterine pencil, but as a rule tampons serving other purposes accomplish this at the same time.

As I speak only of the tampon as used in the dry treatment, I will not refer to it as a holder of tents or intrauterine stems, nor will I speak of it as a hæmostatic, in packing the vagina in hemorrhage post partum or post abortem, or as a dilator for contracted tissues. As such it is well known, and moreover the tamponade of the vagina for hæmostatic purposes should never be resorted to in gynecological practice: the source of hemorrhage must be directly reached; if this be an eroded os, a small pledget of styptic cotton, of the size of a half-dollar and not as thick, pressed against the cervix by a supporting tampon will answer the purpose: we need no packing.

The glycerin tampon we can well dispense with. The method of applying to the uterus or vagina remedies by means of tampons saturated with glyceroles is an extremely filthy method, which may be looked upon as obsolete since medicated cottons have appeared, and there is but one condition under which a treatment so needlessly annoying to the patient may be used, that is, where the emollient effect of the glycerin itself is desired. But since these cases can be better overcome by proper use of the dry method, and remedies properly applied, we can certainly afford to dispense with this extremely wet

treatment. Though good in itself, it accomplishes nothing which cannot be as well obtained by the more cleanly and less annoying dry treatment; it is limited in its usefulness to a very narrow sphere and in that directly to the glycerin effect, as the solid mass afforded by a glycerin tampon has no redeeming mechanical feature which may tempt us to use it; the dry tampon, on the contrary, serving a variety of purposes.

Resumé.—*The dry treatment* is merely an additional weapon in the hand of the gynecologist, as it excludes no other method of treatment, but I sincerely trust that the excellent results which can be thus accomplished will do away with the abuse of intrauterine medication and of the pessary. The endometrium will cease to be the point of attack, and now that the gynecologist has a method of reaching a larger area of the diseased pelvic tissues, he will search more carefully for the true centre of disease, and not invariably pounce upon the long maltreated endometrium which is so small and sensitive a membrane and so nearly connected with the easily ignited peritoneal covering of these viscera, by means of the Fallopian tubes and the great system of lymphatics, that any insult offered this delicate membrane is answered too rapidly by more vital parts. The endometrium upon which heretofore almost all treatment has centred is rarely the primary or most important factor in the morbid conditions of the female genitalia; if it be so, the dry treatment by no means interferes with proper medication, nor does it interfere with the medication of the endometrium if secondarily diseased. I would urge that this membrane be treated more rationally, as we treat other mucous membranes; why should we apply pure tincture of iodine, a strong solution of nitrate of silver, or fuming nitric acid, to the endometrium any more than we do to the throat or mucous membrane of the nose or pharynx? In certain cases it is indeed the proper remedy, but as a routine treatment it is dangerous and injurious and should be abolished. We should put the endometrium upon a level with other mucous membranes and treat it accordingly, in fact with greater care, on account of its intimate connection with the dangerous tissues which surround it. An injury to it is almost like a fuse to a powder-mine, and not less so is the pessary to many of the displaced uteri which are surrounded by inflamed or inflammable tissue. With a more rational treatment of the

endometrium, with the use of electricity both with the galvanic and faradic currents and the aid of postural treatment, the gynecologist can with safety and certainty accomplish results as striking as those accomplished by the surgeon.

For the successful treatment of these diseases, usually of long standing, affecting the most important organs, the functional centres of woman's life, we must endeavor to correct every variation, and we must utilize all agents and every method available to restore normal conditions and healthy action.

Among the neglected and apparently unimportant methods, but which in truth are potent factors, I class *posture* and the material or *quality of the support* for the recumbent body. Night and day, a gynecological patient who obeys instructions lies down three-fourths of the time; the relation and position of the organs in the pelvis is greatly modified by the *posture* of the invalid during this time, and by the *kind of bed* upon which she lies; the posture must be such as to favor a restoration of the normal condition of the parts, but without a level, unimpressible mattress this can never be attained. A good horsehair mattress is essential; a feather bed or an elastic spring mattress is positively injurious, as this yields to the weight of the body at its heaviest part, the pelvis, and a most unfavorable position is thus achieved. The patient who has once experienced the comforts of an unyielding horsehair mattress will never return to springs or feathers; while rest upon the former, in proper posture, gives comfort and relief from pain, upon the latter this may be aggravated or even excited.

Eighteen or twenty hours' rest in a position favoring restoration will further the efforts of the physician by far more than the same time passed with the effects of gravity counteracting the labors of the practitioner. We must avail ourselves of every useful aid, whilst we rely, in the main, upon powders and cotton for medication and support.

I look upon the dry treatment as a step forward in medical gynecology which has been so long neglected and clouded by the splendor and brilliancy of surgical gynecology; and I am convinced that by returning to this underestimated and forgotten field much good can yet be accomplished. I cannot emphasize too strongly that the *dry treatment is not to replace, but to do away with the abuse of other methods of treatment*; since by this a safe method of medication and reposition is

afforded, I trust that it will, with its palpable and evident advantages, do away with the free use and the abuse of intra-uterine medication and of pessaries. With the uterine mucosa treated as other mucous membranes are treated; with the pessary limited to its proper sphere, uterine therapeutics will be more safe and more satisfactory; by giving rest to the viscera, by supporting the uterus and assisting relaxed ligaments, many of the causes of suffering of women are removed, and greater certainty of results is assured from treatment.

In conclusion, that I may not be misunderstood as seeking to establish the dry method as *The Treatment* exclusively to be followed in gynecological therapeutics, I will define the position to which I deem it properly entitled amongst the methods now adopted in practice.

Surgery I place foremost: the field of surgery proper is, of course, undisputed, but even in these cases in which relief is possible by treatment, it is my practice to resort to the knife if decided success does not rapidly follow the treatment inaugurated, since, in the present status of gynecological surgery, operation is fraught with little danger, and the result to be expected is always more perfect than could be expected from any treatment, and accomplished in a comparatively short time.

For treatment proper I rely upon the dry method and the electric current, aided by postural treatment and the hot douche, and, if need be, by *mild* intrauterine medication, methods gentle and safe, the success of which must convince the practitioner that it is no longer necessary to endanger suffering, health-seeking woman by the applicator and the pessary.

3003 LOCUST ST., ST. LOUIS.

THE TREATMENT OF PAIN AND INSOMNIA ARISING FROM
GYNECOLOGICAL CAUSES.

BY

HORATIO R. BIGELOW, M.D.

PERPLEXING factors are these twain in the symptomatology of women's diseases, hard to deal with, and trying to the patience of the woman and of the physician. There are pains *essential* and *pains reflex*, pains *actual* and pains *hysterical*, all of which, or any of which, make the patient miserable. There are, too, insomnias from a "wound-up" feeling in the head, as I have often heard women graphically express it; a nervous tension arising from any objective or subjective cause that sets the mind agog, that engenders introspection, or starts up the energy unduly of the nervous system. Women who go to bed to *think* instead of to sleep, and who go over and over again the trivial incidents of daily routine, making mountains of mole-hills, and dreading the morrow, which shall start the treadmill afresh, these are they who fire up the constitutional engine with the products of nerve combustion, and come to us for help, broken down in body and mind, wrecks demanding the utmost possibilities of the master's art. Then there are women who won't sleep from force of habit, victims of tyrannical practices or vicious heredity; but such as these are readily amenable to the simplest treatment. But there are others who do not sleep because of a radical derangement of the conditions upon which normal sleep depends. These are they whose vascular pressure is interfered with, or who suffer from actual organic disease. There are others, and they number themselves by hundreds, who have anomalous pains and aches, strange twitchings of muscles, numbness of arms and fingers, who start up out of sound sleep without apparent cause, who, in short, are always aching and never sleeping as they should. The charity that suffereth long and is kind, the patience that finds its own reward in doing one's best, and the intelligence that balances cause and effect, are elements pre-eminently demanded from the physician who would battle successfully with such adversaries.

There is a danger in the drug that brings sureease from suf-

fering—a danger infinitely more alarming than that of the disease itself. Victims of drugging lull their consciences into quietude by a logic diseased—necessarily so—as the product of a diseased brain—a logic that an unnatural life without pain is preferable to a natural one with pain is the well-known argument of these victims of a tyrannical habit. The years that come and go, and form the life histories of gynecologists, tell us how suffering women come to us day by day, with almost slavish fidelity, to be rid of the incubus that weighs them down and blights their energy, and the record books recount how faithful to a realization of their high calling the good men exhaust themselves to find means to assuage without involving the risk of creating the habit in the patient herself. I question very much if within the whole realm of the specialty there be any two symptoms which so wear upon the sensibilities of the gynecologist, or call for a larger display of intelligence than these two under consideration. I propose to detail the results of my own experience, first with drugs, and then with general treatment.

1. *Pain. Real Pain.*—*Urethan puriss.* ($\text{NH}_2\text{CO}_2\text{C}_2\text{H}_5$), the ethylic ether of carbaminic acid, a real analgesic as opposed to paraldehyde, which is *only* a hypnotic. In doses of fifteen to twenty grains, I have seen long, pleasant sleep induced in patients who resisted the effects of chloral or of the bromides, and who could not tolerate opium. The effect was lasting, that is, it held the pain in abeyance for varying periods. It is free from all toxic qualities, and combined with other treatment, of which I shall speak later on, is of the greatest value. I do not mean to say that it will take the place of chloral in all cases, but it quiets pain for a longer period and is less transient. I do not advocate its use in sympathetic or hysterical patients, because in such the constitutional indications are plain. It is only when the pain is real and actual. In neuralgias or rheumatism, in subacute peritonitic pain, where the stomach is delicate and intolerant of opium in any form, in peri- or parametric inflammations, or in gouty diatheses, it plays a rôle which no other remedy can. It is less powerful than opium, but it is followed with no unpleasant sequelæ. It has no action upon the medulla oblongata or upon the cord, but works chiefly within the cerebrum. In such cases as these, we have only opium and urethan, perhaps chloral at our disposal. Bromide of potassium

is without permanent effect, so is conium, and in the general run of patients I much prefer the urethan.

2. *Reflex Pain*.—I hold it to be clear that the best remedies for hysterical pain are those which meet the constitutional indications. The persistent use of drugs is fraught with danger, and is merely palliative. In my hands nothing has served me in such good stead as massage, cold alcoholic bathing, with vigorous rubbing, electricity, and attention to the known laws of hygiene. Bromide of potassium occasionally is useful to quiet excess of nervous action, and its effects upon cerebral vascular pressure are marked. But this remedy *alone* is worse than useless, and the effects of its prolonged use upon sensitive skins are very unpleasant. If there be marked functional cardiac disturbance, small doses of digitalis subserve a useful purpose; but my experience has been that the cardiac trouble, the ringing in the ears, the beating of the carotids, etc., all disappear from good, common-sense, general treatment, for, after all, these are merely secondary symptoms. Reflex pain should *never* be treated as a disease per se, but the rather as a mere symptom of some other lesion.

3. *Insomnia*.—While I am convinced that the measures to which I shall call attention later on are the ones best calculated to insure natural sleep, I should be guilty of grave error if I failed to give more than passing notice to the value of *paraldehyde*, a product by condensation of aldehyde and hydrochloric acid (CH_3CHO). Cervello writes that it affects the cerebrum, the spinal cord, and the bulb, successively abolishing the reflexes, causing anesthesia and sleep. It is *excessively* volatile, and should be given in doses from 30 m to 3 i. immediately upon uncorking the bottle containing it. It should be administered in brandy or whiskey. When freshly made and administered as I have said, its results are always gratifying, and I know of no drug that can fill its place. After a full dose, eight hours of peaceful, refreshing, natural sleep will follow. No nausea, no headache, no lassitude have been noticed as sequelæ. Its odor is permeating, so that it is always well to disguise it in alcohol, and it must be administered instantly.

GENERAL TREATMENT—MASSAGE, ELECTRICITY, BATHING, AND
DIET.

Massage.—Above all drugs in the treatment of the general run of cases of pain or of insomnia do I value a system of gen-

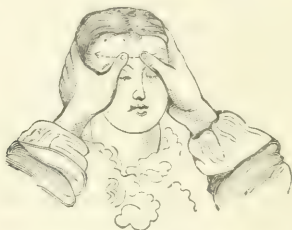


FIG. 1.

eral treatment. I have proven its value thoroughly, and know its worth. If I ride the hobby hard it is because I shall always value the bridge that carries me safely over, and the journey that one makes in honorable company is always more improv-

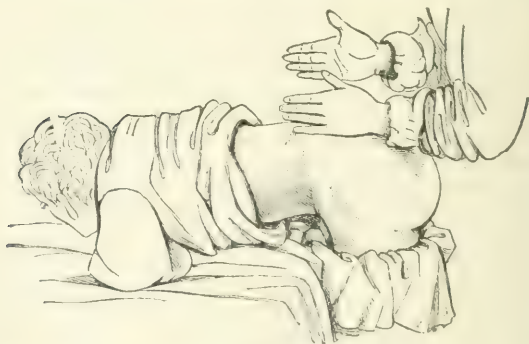


FIG. 2.

ing than when obliged to make it alone. Much has been written of massage—doctors prescribe it, nurses practise it, and patients discuss it—but an intelligent comprehension of massage is not as widespread as it ought to be. It is often practised

by unintelligent nurses, who do not know how to differentiate in its use, and who will rub to the extent of their muscular ability, irrespective of the feelings or needs of the patient. This is worse than useless, and only serves to exaggerate pre-existing troubles. There is as much discriminative intelligence required in prescribing massage as there is in prescribing a drug. Do we require general or local rubbing, deep or superficial massage, or do we need centripetal effleurage or sugillation? Unless acquainted with the technique and purposes, it is impossible to form any logical conception of the benefits. For migraine, effleurage with the flat of the two thumbs, as shown in Fig. 1 (from Reibmayr), is often sufficiently efficacious. I have rubbed away many a headache after a minute's use of this form of massage. Those who realize how frequent a complication migraine is in disease peculiar to women will appreciate this fact.

In backache or lumbago, tapotement is very effectual.

There are many ways of giving massage, but for quieting reflex pains or for inducing sleep, I prefer general *light* rubbing in the direction, so far as possible, of the venous current. Where constipation or a sluggish liver are troublesome factors, I order *deep* massage over the course of the colon and over the liver. It does not do to pound away at a weak, nervous woman, or to rub simply for the sake of rubbing. The cold clammy hands and feet mean something, and they must be met by restoring the circulation to the normal. Cases of insomnia are *extremely* rare, which will not yield to this practice. But it is not only the insomnia that yields, but the vague aches are dissipated, the muscles become more vigorous, and the nervousness is quieted. I know of few things more valuable in gynecological practice than massage and electricity. I do not make these assertions simply upon my own responsibility. I will leave it to the judgment of any specialist who has practised it intelligently, if his experience is not similar. The results in nervous, run-down women are marvellous, and I have failed to meet one out of the many that I have treated myself, or seen treated in Holland, Germany, and Austria, that has not expressed herself as feeling great benefit and comfort from massage. At this time of writing, I have under observation a case which I am handling solely with rubbing and electricity, and with most encouraging success. If others have not the same experience, I feel satisfied

that it is due to the fact that the proper kind of rubbing has not been used. Most earnestly do I commend the practice to my colleagues as one of value and permanence.

Electricity.—I usually order massage at night and electricity three times or more a week in the morning. The mild general faradic current, with the feet in a basin of warm salt water, in which one pole of the battery is immersed, while the other is on the back of the neck, works very nicely. It is of especial value in those women that complain of cold wet hands and feet and a general want of tone. Only ignorance travesties a remedy which it does not understand or has never employed, and to this category can be relegated much of that “damning with faint praise” which clogs scientific advance and mars medical literature, and which has not left either of these two subdivisions unsullied. Electricity in some form or another is the great medicine of the future. We are only now upon the threshold of our knowledge in regard to it, but the dim streaks of light that come to us from afar, through the doors that are only ajar, illumine with brilliancy a previous gloom, and promise much hope that we may reach the full benefit of the noonday light, if we *think* and *work*. A man who has mastered massage, and understands, so far as may be, the uses of the battery, has an invaluable armamentarium always by him. Women rise up by hundreds and call him blessed. In the long run, no drug known to science, no operation yet devised, is so powerful for good. With massage, electricity, and good food, the gynecologist will master most of the difficulties that beset his path. I do not write thus strongly from caprice, or from a tendency to see everything through the glasses of an optimist. But I write earnestly, because I know that what I have written is true and capable of demonstration. A want of patience in carrying out the details is the reason why so many men fail in their treatment. But he who remembers his boyhood fancies and recalls how he watched the lines of the tiny boat his knife was fashioning, with what absorption he noted the unfolding of each curve, and the building up of the creature of his labor, will see a similar satisfaction in the result of maturer work, as the run-down, teary, and complaining woman passes on to her daily work with a smiling face, and out of his gaze with thankful benedictions. It is worth the weariness of spirit and the mental

wear and tear to bring even one suffering soul back to life and health.

3. *Cold bathing and rubbing.*—Cold-water baths, with or without alcohol, followed by vigorous rubbing with a coarse towel or flesh brush, so as to redden the skin thoroughly, are of very great use in nervous disorders. In the first place, the sluggish skin—and we all know how hard and dry the skin is in sallow, slender women—is stimulated to more healthy action, and secondly, the sluggish circulation is also stimulated. The effect of a “general glow” can be appreciated only honestly by those who have experienced it. In Germany, this practice finds universal favor among physicians, and they all speak of it in the highest terms.

4. *General points.*—Many women go to bed to toss restlessly about from side to side for hours. They then complain of a gnawing in the stomach, a sense of hunger. Upon satisfying this they go immediately to sleep. Now it is excellent practice in such cases to order a glass of milk and some bread and butter upon retiring. This is not going to congest the brain and create uneasiness. On the contrary, there will be an anemia of the brain, because the excess of blood will be sent to the stomach to aid digestion. If they go to bed to think, and to plan over and over again the same thing, the muscular tire that comes from massage will make brain tire, and they will fall into a natural slumber. I have known some remarkable instances in which a temporary change of residence to a more stimulating climate has accomplished wonders. For the first week the patients would feel like sleeping most of the time, and their appetites would be astonishing. But I have not yet seen a case (except some of organic brain lesion) which would not yield to massage and electricity. Insomnia, as we see it, is only an expression of want of continuity in the physical harmony, and you can cure it by creating brain tire conjointly with muscle tire. While you are rubbing away the aches, you are setting up the very condition most conducive to sleep. That is, you are killing two birds with one stone. Finally, it is, according to my reasoning, far more desirable in all of these cases to inaugurate the constitutional treatment first before creating fresh nervous discharges by local examination and interference. Ten chances to one, the local difficulty will appreciate the change, and will cease to be a matter of prominence, and even if such should not be the

case, the local treatment will be infinitely more satisfactory if it be deferred until the woman can make healthy response.

LEIPZIG, February, 1887.

PUERPERAL INSANITY.¹

BY

F. C. FERNALD, M.D.,

Washington, D. C.

IN this paper my consideration will be limited to puerperal insanity proper, that is to say, insanity coming on during the first few weeks following parturition.

It is surprising to find, in reading the literature of this disease, how incomplete our knowledge of it really is. The classical account to be found in our text-books and the information to be obtained from medical journals do not give us a complete history of it, because their facts are drawn almost exclusively from experience in insane hospitals whither, as a rule, only the most severe and intractable cases are sent, and whose previous history it is impossible to learn in detail. The general practitioner and the obstetrician, therefore, see the majority of cases of puerperal insanity to their termination, and as any one man's experience must be limited, the only way in which a full description of this affection can be procured is by the method of collective investigation which has not yet been employed, although it will doubtless amply repay for the labor involved.

The statistics at hand have not an absolute value, but they do show the enormous number of the puerperal insane. From three to five per cent of all females admitted into asylums belong to this category, and at the very lowest estimate at least one out of every thousand lying-in women becomes insane.

No one class of society has a preponderance of victims ; it prevails equally among rich and poor.

Etiology.—It seems to me extremely improbable that labor *per se* is the sole cause of an outbreak of insanity. There are likely in every instance a number of influences at work. Chief

¹ Read before the Washington Obstetrical and Gynecological Society, March 4th, 1887.

among these is heredity, not necessarily that the patient has had insane ancestors, but that she has inherited an irritable, impressionable, and unstable nervous system. If we look carefully at the family history, we usually find that there has been insanity, hysteria, epilepsy, chorea, asthma, or other of the neuroses.

Nearly all patients are anemic, and show evident signs of a sluggish alimentary tract. Several of my medical friends resident in asylums agree in saying that constipation is the rule in the cases that they see. Among the poor, bad hygiene, overwork, inadequate and improper food, rapid succession of pregnancies, and prolonged lactation bring about the anemic condition. Among the higher classes of society, the women too often lead an aimless existence; idleness alternates with unhealthy excitement; under these circumstances, they are apt to take too little exercise, the bowels becomes constipated, the digestion impaired, and anemia is the result. On account of anemia the nervous system lacks proper nutrition and becomes very impressionable.

Moral as well as physical causes also have an influence. It is well known that among unmarried mothers puerperal insanity is relatively much more frequent than among the married. Here grief, shame, and anxiety prey upon the patient. Abuse by a drunken husband and desertion are other examples. Moral influences, however, are probably more potent among the higher classes. Grief at the loss of an infant or of a near relative, sudden or severe fright are to be added to the list, and a morbid dread of labor during pregnancy may develop mental derangement after it.

A few authors consider uremia a frequent cause, but this is at best a mere hypothesis based upon a small number of observations where there was albumin in the urine, and that only temporarily. It is hard to see how such a transitory albuminuria can give rise to an affection that lasts weeks and months. Further objection is, that we know nothing about the urine of puerperal women in general.

Primiparae, especially if very young, or elderly, are generally thought to be particularly liable to puerperal insanity.

Many of the symptoms of puerperal insanity, as given by most authors, are due solely to septic infection accompanying the mental disturbance. A case related by Noeggerath would seem to

show that septicemia is capable of exciting insanity. His patient, after pregnancy, developed insanity and at the same time septicemia from a suppurating ovarian sac. The sac was removed by laparotomy and immediate cure of both conditions followed.

The relation of septic infection to puerperal insanity could be definitely settled, I think, if we knew whether, in the great maternities where the efficacy of the antiseptic system has been so admirably demonstrated in the past few years, there has been a diminution of insanity corresponding to the lessened number of cases of septicemia, but I am not aware that any data on this subject have so far been published.

Protracted, abnormal, and instrumental labors, post partum hemorrhage, and eclampsia are mentioned as causes, but it is evident that in themselves they are not sufficient to produce insanity or we should have fewer sane.

To summarize briefly what seems to me the etiology of puerperal insanity, I would say that *a hereditary neurotic constitution is the predisposing cause, while the exciting cause is physical depression, resulting from a number of factors of which labor is only one, some of the remainder having usually been acting for a shorter or longer time before delivery.*

Symptoms.—When fully developed, puerperal insanity conforms with one of three types, viz.: acute mania, melancholia, or dementia, all differing in no important particular from those conditions occurring under other circumstances.

The symptoms of the premonitory stage possess the greatest interest and importance, and it is those that I have sought most diligently, but just here our knowledge is most defective, for the simple reason (as stated before) that in asylums, whence our information is derived, the patients are not seen early, and, furthermore, no accurate history of their previous condition can be ascertained.

A rather unusual form of mania is a transitory one, beginning abruptly and passing off as rapidly a few days after delivery. The face is flushed, pulse full, delirium active and talkative: there are hallucinations and delusions by reason of which she may do damage to herself or child. Such cases possess medico-legal interest, because infanticide is likely to be committed, and the patient become sane immediately afterwards without the faintest remembrance of the deed. As one writer puts it: "The explosion readjusts the balance of reason."

Ordinarily, mania does not develop so suddenly, although, as a rule, it comes on sooner after labor than does melancholia. Premonitory symptoms are : insomnia, restlessness, and an indescribable hurry, irritability, and intolerance of restraint ; either unconcern or open hostility to infant ; suspicion of husband, relative, doctor, or attendants ; a prejudice against her room, house, or surroundings ; refusal of food.

Some say that the lochia become suppressed or fetid, milk stops, temperature rises, and uterine tenderness appears. Now, all of these last-mentioned symptoms are, to my mind, evidence of either a local uterine or pelvic inflammation, or of septicemia. Later, the excitement becomes intense ; hallucinations and delusions arise, on account of which she actively refuses food, imagines it has been poisoned, and so on ; she is boisterous, often obscene and erotic ; has transitory impulses to suicide, but her attempts are usually made in an aimless way ; she may do injury to infant or attendants.

This state may go on for several weeks, when the patient either falls into a typhoid condition and dies from exhaustion, or dies from some complication ; or, in favorable cases, the excitement lessens, and sleep and appetite return, after which restoration to health takes place gradually, and sometimes progressively, although in the majority of instances the period of excitement is followed by one of partial dementia, lasting for two or three weeks, during which she is dull, does not speak voluntarily, has fixed delusions, mistakes persons, etc. Not all cases of mania are so severe as those described, for in some the excitement is much less and of shorter duration, stupor not so marked or even absent, convalescence rapid.

Melancholia is less common than mania, and generally comes on toward the end of the lying-in, is more gradual in its onset, and continues longer. At first the symptoms excite little or no apprehension. She appears out of health for some days, perhaps, has dyspepsia and restless sleep, and may not progress properly to convalescence, or even lose ground. Then she becomes fretful, morbidly anxious about her husband or child ; is not easily led into conversation ; has aversion to food, not, however, the same active antipathy of mania. After a time, her melancholy deepens and becomes excessive ; she has fixed delusions of despondent character which frequently refer to her child or husband ; for example, cannot believe that they are not

dead, and no proof can convince her; at times the delusions are of a religious nature, thinks she has committed the unpardonable sin, etc.

The suicidal tendency appears, and is the more to be feared and guarded against as it is more persistent and calculating than that of mania; the face is pale and gloomy; eye listless; circulation feeble; skin cool and moist; in short, a condition of weakness instead of the exhaustion of mania.

Dementia is the rarest of all types and the most stubborn; for, if thoroughly established, it tends to become chronic and incurable. With little, if any, warning, patient begins to be listless and indifferent to what is going on about her; passes her urine and feces unheeded; sleeps when put to bed; asks for nothing; in fact, would starve if no food were offered her.

Diagnosis.—After what has been said, the subject of diagnosis may be dismissed with very few words. When puerperal insanity is fully developed, it offers no obstacle to diagnosis. We need further investigation before we can know much of the premonitory symptoms. One should look carefully for complications that may be more or less masked by the mental disturbance, and one must not regard too lightly even the slight changes in the mental character of his patients during the puerperal period.

Prognosis.—Two-thirds or more of the puerperal insane recover, the time varying from a few days or weeks to many months; maniacal cases on the average get well in from three to six months, while the melancholic ones take somewhat longer. Any case that continues for over nine months may be considered doubtful, although not rarely recovery takes place even after the lapse of several years. To use the words of an old writer: "Mania is more dangerous to life, melancholia to reason." In many cases that are practically well, there often remains, for a long period, a certain amount of mental weakness. A large number of writers declare that we should never consider our patients well until menstruation is again normally established, and that restoration of that function without mental health warrants a bad or at least a very doubtful prognosis.

Fever in the beginning or at any time previous to the period of exhaustion, I believe, usually means the presence of some kind of complication which will lessen the chances of recovery in accordance with its nature and in proportion to its severity.

Death in mania usually occurs in the first two or three weeks from the complication alone, or from that and the added exhaustion springing from sleeplessness and ceaseless activity produced by the mental disturbance, or, what is more rare, from this latter condition alone.

Treatment.—It is as much our duty to prevent disease as to attempt to cure it, *but until the laity are educated to the belief that every pregnant woman's welfare demands the watchful care of her physician during the whole period of gestation*, I believe we can do but very little toward preventing the disease under discussion.

Whether or not those women who during pregnancy become fretful, peevish, and unreasonable, are especially liable to suffer from puerperal insanity I am unable to learn, but I should regard them with a good deal of anxiety, especially if there were a tendency to decided melancholia. When opportunity offers, we should, of course, do everything possible to improve the general health during pregnancy, and warn the patient and her friends against all perturbing moral and mental influences. Septic infection during and after labor should be carefully guarded against. A bountiful supply of sleep should be obtained during the puerperal period from its very beginning. I believe the importance of this is not sufficiently valued. With the first intimation of mental trouble the infant should be at once removed from its mother, both to save it from harm and for the mother's own sake, for the child's presence always adds fuel to the flames.

We have next to decide whether the patient shall be sent to an asylum or treated at home. Proper home treatment requires the utmost tact and patience on the physician's part, and the liberal expenditure of money; so that if the patient is poor we have no alternative but the asylum, and the sooner she is sent there the better; of course, having due regard to her condition as a lying-in woman. Where the family can afford it, we should by all means first attempt home-treatment, and consider the asylum only as the last resort. The chief reason for so doing is to avoid the so-called disgrace of having been in an insane asylum. If home treatment is successful, she will only be thought to have been a little queer, the confinement will account for that, and nothing more will either be said or thought of it, but, if sent to the hospital (to quote Dr. Godding's words), "though

the recovery is rapid and satisfactory, still she has been insane, and this is never forgotten by her children; henceforward there is a certain dread of what may be in the future, a skeleton in the closet, not mentioned, but always there."

The room should be airy, cool, and but little darkened. If the patient is violent, all loose articles would best be removed lest she injure herself or attendants. The husband and relatives should be rigidly excluded; the attendants ought to be strangers to her and, if possible, skilled in the proper management of the insane; there should be more than one, so that the patient can be kept under continuous observation to prevent suicide. If there is difficulty in keeping her in bed, a mattress may be put upon the floor, force being rarely necessary, but when called for, a folded sheet may be put across the arms and chest, passed under the bed, and tied.

Melancholic patients do better if taken from home to a quiet country place away from observation.

Complications demand appropriate treatment.

Sleep and a full supply of good food are the essential requisites. Where refusal of food is active, persistent effort must be made to induce her to take it; if not from one person, let another try; one of the opposite sex may succeed when others fail. If necessary, there should be no hesitancy in employing forced feeding by nasal or stomach tube. Insomnia is usually very persistent, but even where drugs for the time are inert, sleep will often follow a liberal supply of food, especially if accompanied by an alcoholic drink, such as porter. Stronger stimulants ought not to be given unless in exhaustion, for they only make matters worse. Of hypnotics, the best are chloral and the bromides; opium and its alkaloids are condemned on all sides as worse than useless in mania, and of doubtful value in melancholia. A warm plunge bath for fifteen to twenty minutes is, at times, successful, although sometimes it may only increase the excitement. Whether hyoseyamine has any efficacy I am unable to say, but should consider it worthy of a trial. Mild purgation should be routine treatment. Indeed, in those cases of transitory mania, a purge followed by a few doses of chloral and bromides is all that is needed. During convalescence, the infant should be brought to its mother as an experiment, for it often acts as a stimulus, bringing her back to a realizing sense of the duties of motherhood; the effect, however,

should be carefully watched and, if not favorable, the child should be removed.

Marital relations should not be resumed too early, for fear of another pregnancy, although it by no means follows that subsequent labors will necessarily be accompanied by insanity, for at other times the combination of the etiological factors may be wanting.

The following references have been freely drawn from:

- Gooch: "Trans. Col. Phys.," Lond., 1820, vi., 263.
 Barker: *N. Y. Med. J.*, 1872, xvi., 449.
 Behier: *Gaz. d. hôp.*, Par., 1875, xlviii., 354.
 Bird: *Brit. M. J.*, Lond., 1879, i., 544.
 Boyd: *Jour. Ment. Sc.*, Lond., 1870-71.
 Dickson: *Jour. Ment. Sc.*, Lond., 1870-71.
 Garner: *Canada Lancet*, Toronto, 1876, ix., 42.
 Noeggerath: *Am. J. OBST.*, N. Y., 1880, xiii., 885.
 Pedler: "West Riding Lun. Asylum Med. Report," London, 1872, ii., 137.
 Hengst: *Med. Surg. Reporter*, Phil., 1878, xxxix., 134.
 Hughson: *Med. Surg. Reporter*, Phil., 1875, xxxii., 104.
 Godding: *Boston M. & S. J.*, 1874, xci., 317.
 McLeod: *Brit. M. J.*, Aug. 7th, 1886.
 Savage: "Handbook Insanity."
 Lusk: "Midwifery."
 Playfair: "Midwifery."
 Savage: "Guy's Hosp. Rep.," 1875, 3, s. xx., 83.
 Ott: *Clinical News*, Phila., 1880, i., 337.
 Shaw: *Med. Exam.*, London, 1876, i., 620.
 Madden: *Brit. & For. M. Rev.*, L., 1871, xlviii., 477.

TWO LAPAROTOMIES ON SAME PATIENT. REMOVAL OF BOTH OVARIES FOR CYSTIC DISEASE, AND ALSO A LARGE TUMOR OF THE MESENTERY. SILK LIGATURE PASSES INTO THE BLADDER AND SERVES AS THE NUCLEUS OF A CALCULUS.¹

BY
 R. A. KINLOCH, M.D.,
 of Charleston, S. C.

ON the 7th of January, 1886, I operated, at the St. Francis Xavier's Infirmary, upon Mrs. O'N., aged 28 years, for the removal of a very large cystoma of the left ovary. She had been confined some three months before, at Port Royal, S. C., and

¹ Read at meeting of the S. C. Medical Association, April 12th, 1887.

had been ill with what was called puerperal fever, or peritonitis, following labor. Upon reaching this city she came under my care. I found the abdomen largely distended with fluid, the patient emaciated, and enfeebled, and having fever of an asthenic type. After a few days' rest, careful regulation of diet, and a few doses of quinine and opium, her general condition improved. I now aspirated the abdomen, or rather the cyst as it proved to be, and drew off several gallons of fluid of a turbid, dirty straw color. I had supposed from the history that the fluid occupied the peritoneal cavity. After its withdrawal, I discovered by manipulation that there existed a large movable tumor, and by further investigation I made the diagnosis of ovarian cystoma. The tumor had likely been growing for more than a year, and had complicated the pregnancy.¹ Her labor had been tedious and painful, but she had given birth to a healthy and well-developed infant. Patient was by diet, and medication with quinine and iron, prepared for operation. There were extensive parietal and intestinal adhesions, and at one point, to



Anterior view.



Posterior view.

the right of the abdomen and above the umbilicus, a portion of the omentum was attached to the tumor. This was resected after applying to the tissue several silk ligatures. A solution of hydr. bichlor. 1-8000, was used in cleansing out the cavity. A glass drainage tube was inserted, and the external wound dressed with iodoform and cotton. I regarded the case as an unpromising one. To my surprise the patient never had a serious symptom, and recovered so rapidly that in three weeks she was walking about her room. The only annoyance experienced was the formation of hard feculent masses in the colon and rectum because of a too exclusive milk diet.

In the early part of July, six months after this operation, patient called at my office and complained of symptoms of cystitis or irritable bladder. I was about leaving the city for a summer vacation. I prescribed for her an alkaline mixture, and anodyne suppositories when necessary. Upon my return home in October, patient visited me, and gave the following history: The remedies given for the cystitis had afforded very little relief, but

¹ From the pressure of the uterus the tumor had been divided so as to feel like a saddle-bag—full upon the sides and thin in the middle.

about a month previous, while urinating, she experienced great difficulty and pain, and suddenly there fell into the chamber this foreign body (calculus exhibited) which she presented to me. I give herewith the drawing and proper dimensions of the concretion. This is conical in shape, and at its apex can be seen the ends of the braided silk ligature which I used for tying the pedicle of the tumor at the time of operation; curious enough it forms the nucleus of the phosphatic calculus. It most certainly passed from the abdominal cavity into the cavity of the bladder, how and by what process may be a matter for speculation.¹ The history of this lady is further interesting. When presenting me with the calculus, she seemed to be in perfect health, but said she would like me to examine her abdomen, as there was a small depression or opening in the deep abdominal parietes just where the drainage tube had been. A few days after this, I visited her at her residence to examine the condition referred to. I found a deficiency in the deep abdominal structures into which I could put the end of my index finger. It was of no consequence; there was no hernial protrusion. But to my surprise I found the abdominal cavity occupied by another tumor, compact, semi-fluctuating, and with diameters respectively of about eight and twelve inches. The patient had not been aware of its existence. She had attributed her enlargement to fat and improved health. On the 20th of November, 1886, I operated for the removal of this second tumor, which I then presumed was a cystoma of the right ovary. Upon opening the abdomen, through the line of the old incision, I began my search for adhesions. I soon found a portion of the omentum attached to the surface of the tumor just about where I had ligated this structure at my previous operation. These supposed adhesions were spread out fan-like upon the outer cyst wall, and when traced backwards were resolvable into three very large veins, round and fully distended. I applied two silk ligatures, by transfixing the tissue, to each vein, and then encircled the three veins, together with the omental tissue *en masse*, with the free ends of one of the proximal ligatures; the other ligatures were cut close to the loops. The vascular omental structure was cut between the ligatures, and a portion left attached to the cyst-wall. I next punctured the cystic growth with Emmet's large trocar to try and reduce its size. This availed but little, as the interior cysts were small and their contents quite viscid. Patient was turned upon the side and the tumor freely cut into with a scalpel. This enabled me to begin its delivery through the abdominal wound, which was altogether below the umbilicus. As the tumor began to emerge, I passed my hand deep into the pelvic cavity to get at the supposed pedicle, still believing the growth to be a cystoma of the right ovary. Suddenly, and to my great surprise, the whole

¹ Prof. T. G. Thomas, of New York, informs me that in one of his cases of ovariectomy the ligature was discharged from the bladder. This was reported to him by the physician who attended the case.

mass tumbled out on to the table. The tumor was of the omentum, and the tissue that I had in the beginning ligated and divided constituted the sole attachment. The right ovary was now brought into view, and, as it presented evidences of beginning cystic disease, was removed. In bringing together the parietal wound, with sutures of silk-worm gut, I thought it best to include the pedicle, which I have described as made up of enlarged veins and omental structure, in the wound. I therefore transfixed this with a large steel needle, wrapped the ends of the needle in iodoformed cotton, and dressed the wound with the same material. Patient progressed favorably, experiencing only slight rise of temperature for two or three days, attributable to a small parietal abscess. I adopted Tait's plan, and acted on the bowels on the third day with salines. In withdrawing the needle from the pedicle, which never presented any evidence of gangrene, the stump retreated towards the cavity and was lost in the deep part of the parietal wound. I felt somewhat uneasy at this occurrence, but no trouble ensued. Patient was about in three weeks, and was soon after this time discharged. My friend, Dr. John Guitéras, kindly examined the growth and reported as follows : " It presented no evidence of malignity. The numerous cysts were lined with columnar epithelium, some of the cells being ciliated. The fibrous tissue stroma very vascular. There are innumerable minute cysts in the fibrous tissue-walls. In all of these the columnar epithelium preserves its perfectly regular arrangement." At this date, April 8th, 1887, patient is in perfect health. There has been no menstruation since last operation.

REPORT ON OBSTETRICS AND GYNECOLOGY IN FRANCE.

BY

A. AUVARD, M.D.,

Obstetrician to the Paris Hospitals.

ABDOMINAL palpation, which is such a valuable diagnostic measure, is being carefully studied by all the younger accoucheurs. Dr. Rivière, the Senior at the Bordeaux Obstetrical Clinic, has just published an interesting monograph on this subject in reference, particularly, to palpation of the shoulder. Ordinarily, the fetal presentation may be determined with ease by the situation of the head, but the exact position cannot always be as readily made out, especially when the back of the fetus is posterior, and it is here that palpation of the shoulder is of value.

To find the shoulder, the two hands (in case of a vertex presentation) are applied over the head at the superior strait, and the abdominal wall is palpated from below upwards, when one hand finds its progress unopposed towards the thorax, whilst the other meets with an obstacle, which is the anterior shoulder of the fetus. The side to which the shoulder is having been determined, it is easy to find the back, for the anterior shoulder is always on the same side as the back, or, what amounts to the same thing as the occiput, and therefore shoulder to the left of the median line, left position, and shoulder to the right, right position. Further, if the shoulder is near the median line the position is anterior (O.I.L.A. or O.I.R.A.), and if the shoulder is at a distance from the median line, about three inches, the position is posterior (O.I.L.P. or O.I.R.P.).

It is likely that obstetricians, after having read this monograph, will palpate for the shoulder, although M. Rivière has unquestionably exaggerated its importance, since in the majority of cases it is far more convenient to palpate the back in order to determine the position of the fetus.

In connection with palpation, it will be of interest to recall here a discussion which has recently taken place, in regard to version by external manipulation, at the obstetrical and gynecological society. This variety of version, indeed, is closely allied to palpation, for it necessitates at the outset exact diagnosis reached by means of the latter, and then it calls for skilled and educated hands. This discussion revealed great difference in opinion. Certain accoucheurs condemn the method as dangerous, likely to cause rupture of the uterus and premature rupture of the membranes; others as useless in every instance, or else as of value only in breech or in shoulder presentation, and this is the opinion of the majority. It is always preferable, they say, to obtain a vertex presentation. As to the objection that this version often occurs spontaneously during the latter months of pregnancy, it is in part valid, but since nature does not always accomplish it, it is wiser for the accoucheur to resort to it in every instance, and if it be true that sometimes this intervention has been unnecessary, it is also true that in other cases we have forestalled a vicious presentation. In other words, it is preferable to perform a possibly useless harmless operation, rather than to have to deal with an abnormal presentation.

Another question which has been much discussed is the management of retained secundines after miscarriage. Doléris, who has become with us the partisan of active intervention, claims

that, in every instance where after the escape of the embryo or of the fetus the cervix closes, we should resort to curetting and brushing out (*Ecouvillonnage*) of the uterine cavity. The term *Ecouvillonnage* is applied by the author to the operation which he favors, and which consists in brushing out the uterine cavity with a peculiarly shaped brush. This brush resembles that which is used for cleansing the interior of bottles, and which was formerly used for wiping out cannon.

The two principal arguments, according to Doléris, in favor of active intervention are the accidents which may result from retention of the placenta, hemorrhage, and septicemia. He is almost alone in his opinion.¹ Generally, it is granted that curetting is only of utility in exceptional cases, and expectancy is believed to be the wiser course in the majority of instances. In case of hemorrhage—and this may also follow curetting—the tampon is at our disposal for checking it. In case of septicemia, in the majority of cases, antiseptic vaginal injections suffice to check the fetor of the discharge, and if not, we may resort to intrauterine injections. It is only in very exceptional cases that this antiseptic medication fails, and that it is allowable to act surgically.

In an article which I recently published in the *Gazette Hebdomadaire*, I have examined the question of the management of the physiological third stage of labor in reference to the three methods, expectation, traction, and expression.

Expectancy, pure and simple, has been generally abandoned, and obstetricians may be divided into tractionists and expressionists. It is unnecessary for me to outline here for the readers of this JOURNAL the advantages and disadvantages of these methods, and I will state simply the conclusion I have reached, which is that a mixed method is the best, and I formulated it as follows: Do nothing during the first period of the third stage when the placenta is separating; interfere, if need be, during the second period by expression through one hand on the uterus and by traction on the cord with the other hand; during the third period keep up traction with the one hand and steady the uterus with the other. I am referring, of course, purely to the normal third stage. The management is very different in case of complication.

¹[This statement surely applies only to France. In Germany and America, very weighty authority favors the *immediate* removal of the secundines after abortion, by fingers or dull curettes, whenever practicable. My own experience, in a large consulting practice with these cases, decidedly confirms this method. P. F. M.]

Dr. Queirel, of Marseilles, has published a very interesting work on the relation between cholera and the puerperal state. He has analyzed 67 cases of the disease during pregnancy, with 39 deaths and 28 recoveries. There were 29 miscarriages or premature labors. Where pregnancy was interfered with, the mortality was 66%, and only 50% when it went to term. Miscarriage, therefore, may be considered an aggravating factor. It is difficult to state the cause which awakens uterine contractions. It may be 1st, reflex action; 2d, cramps of the uterus analogous to those of the legs; 3d, toxemia; 4th, disturbances of the utero-placental circulation. The liquor amnii diminishes sensibly, and it would seem as though the ovum participated in the loss of fluid from the maternal organism.

M. Budin's interne at the *Charité*, M. Lancry, whose recent death we deplore, has published in the *Progrès Médicale*, of September 11th, 1886, a very interesting case of eclampsia where venesection to the extent of one and a third pounds notably improved the state of the patient. The convulsive attacks, which had persisted notwithstanding the administration of large doses of chloral, ceased, and the temperature slowly fell to the normal. The question of venesection is at present much discussed by the Parisian obstetricians, some resorting to it, and others rejecting it entirely. The solution of the question is very difficult, owing to the curious behavior of this strange disease, which sometimes is recovered from without the slightest treatment, and again ends in death, notwithstanding every therapeutic measure most skillfully and actively used. I do not aim here at stating the conflicting views, but simply refer to them. It would be difficult to say which is in the ascendant. Further observations are necessary to settle the question.

In conclusion, I will mention an important clinical demonstration of Dr. Budin's, reported in the *Semaine Médicale*, of March 9th, 1887, on the subject of laceration of the perineum. His exhaustive researches in regard to the hymen and its obstetrical importance are well known. In this demonstration, M. Budin shows the rôle played by this diaphragm in the production of lacerations. The lateral tears are of no importance and do not invade the neighboring tissues, but posterior lacerations are of the greatest importance, since they extend to a greater or less degree into the perineal body. The hymen, in exceptional cases, may become, by its persistence and its rigidity, a real and serious obstacle to delivery.

PARIS, May, 1887.

CORRESPONDENCE.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the review of Vol. XI. of the “Transactions of the American Gynecological Society,” which appeared in the last number of the JOURNAL, the notice of my paper on occipito-posterior positions seems to me to misrepresent, by implication, my opinion of the propriety of intra-vaginal rotation of curved forceps. On page 457 of the “Transactions,” I said that the “intra-vaginal rotation of curved forceps is attended with no small risk to the mother’s soft parts, and is not, *except under certain contingencies*, a justifiable operation; but, *were there no safer way*, this method would commend itself to my judgment as preferable to delivering the head with the occiput posterior, with the almost inevitable result of a serious perineal tear.” I then went on to describe a “safer way,” namely: the use of straight forceps, which in careful hands may be allowed to rotate within the vagina without danger to the maternal soft parts. To this very important part of my paper the reviewer makes no allusion.

I fully agree with the reviewer that “in the hands of the average practitioner” the intra-vaginal rotation of curved forceps would be “entirely unjustifiable”; and in the instruction of students I am careful so to express myself. Whether “in the hands of an expert” the operation “would seem to present elements of danger fully as serious as an occipito-posterior delivery” is fairly a matter of opinion. I can only say, as I state in my paper, that I have several times allowed the head and curved forceps to rotate within the vagina without injury to mother or child; but I would not perform this operation “*except under certain contingencies*,” namely, when immediate delivery is demanded, when the vagina is lax and roomy, and when a straight forceps is not obtainable.

As it was one of the chief objects of my paper to advocate the use of straight forceps in persisting posterior positions of the occiput, I should be glad if you would give this letter a place in your JOURNAL.

Yours very truly,

CHARLES M. GREEN.

BOSTON, June, 1887.

EDITORIAL.

THE following notice has been sent to this JOURNAL, with the request that it be inserted where it will meet the eyes of the profession in this country. It gives me pleasure to comply with the request, and to open the subscription. *Contributions may be sent to me*, and will be forwarded to Berlin on July 1st; they will be acknowledged by letter and duly reported in this JOURNAL.

PAUL F. MUNDÉ.

20 WEST 45TH STREET, May 1st, 1887.

AN APPEAL FOR A MEMORIAL TO PROFESSOR CARL SCHROEDER.

The undersigned have combined for the purpose of erecting to the memory of their friend and teacher,

PROFESSOR CARL SCHROEDER,

who died on Feb. 7th, 1887, a suitable testimonial. Our idea at present is to place a marble bust of the deceased in the Gynecological Clinic at Berlin; but this project is subject to future modification. We request those members of the profession, and others who have benefitted by Prof. Schroeder's advice and treatment, and who desire to assist us in our enterprise, to send their contributions to Dr. J. Veit, Berlin, W. Matthäi-Kirchstrasse 12.

Frommel (Munich), Gusserow (Berlin), M. Hofmeier (Berlin), Leube (Würzburg), Olshausen (Halle), Rosenthal (Erlangen), C. Ruge (Berlin), G. Veit (Bonn), J. Veit (Berlin), R. Virchow (Berlin), Waldeyer (Berlin), Winter (Berlin); the Obstetrical and Gynecological Society of Berlin through J. A. Kaufmann, Löhlein, A. Martin.

Contributions from America :

Paul F. Mundé.....	\$25 00
T. G. Thomas, New York.....	25 00
Wm. T. Lusk, New York.....	10 00
Leonard Weber, New York.....	10 00
F. Kammerer, New York.....	5 00
R. Herdegen, Milwaukee, Wis.....	5 00

The above amount has been forwarded to Berlin.

PAUL F. MUNDÉ.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, May 3d, 1887.

The President, DR. PAUL F. MUNDÉ, in the Chair.

OVARIOTOMY DURING PREGNANCY.

THE PRESIDENT presented two dermoid cysts which he had removed from a patient ten days previously, at the fifth month of pregnancy. She had been pregnant once before, and had been delivered by the forceps of a dead child after a very tedious labor, presumably due to slight pelvic contraction. She had been referred to him by her family physician when four months pregnant, for the second time, because she complained of bearing-down pain, and there was a suspicion that something was wrong. On examination, he had found the cervix high up under the symphysis, deviated to the left, and a large indistinct tumor posteriorly, suggestive of the retroflexed fundus of the uterus, although hardly approximating in size that of this organ at the fourth month of gestation. Through the abdominal walls indistinct masses were felt on both sides of the mid-line. Owing to the difficulty of reaching an exact diagnosis, he requested an examination under chloroform, when the pelvic tumor was determined to be an ovarian cyst, the fundus was found to the right of the mid-line, and to the left there was a body similar in shape and size to the spleen. He suggested waiting a few weeks until the appearance of fetal movements would differentiate distinctly the body of the uterus, although he counselled laparotomy, because it was evident that a full-grown fetus could not be forced through the pelvis without serious risk to the mother, and because it seemed to him that the induction of premature labor would result in compression of the tumor and possibly in sepsis. At his suggestion, Dr. Thomas saw the case in consultation at the end of two weeks, and agreed in the diagnosis of pregnancy with ovarian cyst, the nature of the second tumor (to the left) being left uncertain, and he advised laparotomy without delay. This was duly performed on April 23d, and the operation was a very difficult and tedious one. On opening the abdomen, there was a gush of fluid which seemed to be ascitic, but which afterwards proved to be ovarian. There existed chronic peritonitis, and it was only after careful dissection that he was able to enter the peritoneal cavity. The bladder was stretched out nearly to the umbilicus, and was adherent to the abdominal walls and the tumor on the left side. He

first removed the tumor to the left, which turned out to be a dermoid, filled with hair and fatty matter.

At first sight it seemed impossible to remove the second tumor, for it simulated an intraligamentous growth, and he was tempted to tap and to drain it through the vagina, but eventually, by tracing the tube down, he was able to lift a flaccid sac from the abdominal cavity with a large rent in it, from which the fluid in the abdominal cavity had issued. On passing his hand into this sac, he reached the pelvic tumor which had simulated the retroflexed uterus. He drew it up, clamped it, tied it, and seared it over with the Paquelin, necessarily so close to the uterus, indeed, that he had remarked at the time that he hardly thought that organ would stand such interference. The peritoneal cavity was washed out with a 1 : 1,000 solution of boracic acid until it came out clear, and no drainage tube was used. Both pedicles were dropped, and the abdominal wound was closed with running catgut sutures applied in layers. The patient rallied well from the chloroform, which he had used because he had lately seen two instances, after laparotomy, of acute pyelo-nephritis after ether. There was after-vomiting for four days. In forty-eight hours labor pains set in, although morphia had been administered hypodermically all along as a prophylactic measure against miscarriage. Seventy-two hours after the operation, he was suddenly called to the patient and found the entire intact ovum escaping from the vulva. The patient, who regretted exceedingly the loss of the child, was fearfully collapsed, being blue, with a temperature of 101°, and a pulse of 130. A two-per-cent solution of cocaine, given in five-drop doses every hour, checked the vomiting, and normal reaction came on during the night. She was now convalescing well, and has gone on to perfect recovery. He had since learned that this patient had had an attack of general peritonitis one year previously.

He stated that this was the third case of pregnancy complicated with ovarian tumor which he had seen during the winter. The first case he had operated upon at the beginning of the fifth month, and she had recovered and gone to term; in the second case, he had induced labor at the seventh month, obtaining a living child (which is still alive), and he had since removed the ovarian cyst and the other diseased ovary successfully.

DR. CHAMBERS said that three weeks previously he had assisted Dr. Thomas in an ovariectomy on a patient three months gravid, and that she had made a good recovery without miscarrying.

THE PRESIDENT remarked that the earlier the gestation the less likelihood there was of an operation interfering with its course.

DR. LEE stated that he had operated three times during pregnancy. In the first instance, the patient was three months gravid, and she had not aborted, although he had, by an unfortunate mistake, tapped the uterus; in the second instance, he had performed laparotomy for the removal of a malignant growth, and death had resulted from septic peritonitis; in the third instance, the

operation was performed at the third month of gestation, and the patient had recovered without any mishap. He believed that the rule should be to operate if the tumor were low down in the pelvis, but where it was high up, and had a long pedicle, he would favor non-interference, and could not in such instances accept Barnes' view that premature labor should be induced. He had recently seen a case with Dr. Polk where the pedicle was long and the tumor elevated. He had counselled against laparotomy or tapping, and the patient had gone to term and convalesced well.

DR. ABBOT asked if it would be wise to operate at a date which would correspond to the menstrual period were the woman not gravid.

DR. LEE expressed the opinion that after the gestation had lasted for some months, the choice of date did not matter, since the menstrual influence had passed off.

OÖPHORECTOMY FOR HYSTERO-MANIA.

DR. LEE presented the ovaries which he had removed from a patient with the following history: Thirty years of age, and one delivery nine years previously. Her symptoms, when she consulted him, were pain and convulsive attacks at the menstrual period. On local examination, he found the uterus retroflexed and adherent, with prolapse of both ovaries. The patient had been subjected to routine methods of treatment at the hands of other gynecologists without effect, and he tried the same, including electricity, with negative result. He then attempted to forcibly break up the adhesions under anesthesia. This failed, and the patient developed melancholia, hysteria, aphasia to the first and second degrees, was utterly unable to care for herself, and seemed on the verge of insanity. Dr. Polk saw the case with him, and thought that laparotomy, if resorted to, might have the effect of intensifying the insane tendencies by precipitating the menopause. Still, as the patient did not improve at all under change of air and roborant treatment, the speaker had removed the ovaries one week previously, and the improvement in her condition had been most marked since. He would not be understood as reporting the case as an instance of cure, but only as an illustration of the advisability of performing Tait's operation in similar cases. He believed the operation to be indicated.

Dr. Lee also presented an ovary which he had removed, and which illustrated the desirability of always removing both ovaries at one and the same operation. The specimen contained a hematoma, and the ovary had not been removed at the time when he had taken out its fellow, because, although it had not seemed sound, the patient had begged him not to sterilize her, as she was anxious to marry. At the second menstruation after the first laparotomy, she began to suffer from the same symptoms as before—dysmenorrhea, etc.—and, after testing the routine methods, he had, for the second time, opened her, and removed the ovary, which was large and cystic, and the tube. He had operated in the line of

the first incision, and had met with many adhesions. The point he wished to emphasize was the advisability of not leaving an ovary, when its fellow has to be removed for inflammatory causes, and thus subjecting the patient to the risk of a second laparotomy.

THE PRESIDENT said that the subject of removal of the ovaries for mental affections was still *sub judice*, and it would be of interest if those who had had experience in this direction would record their views and results. The operator who advised removing the ovaries for this indication was not Tait, however, but Robert Battey.

DR. CLEVELAND asked if it would be considered justifiable to remove the second ovary against the patient's protest in case it were found to be diseased?

DR. LEE replied in the negative, although he was satisfied it was good practice to remove an organ which was prone to contract adhesions as the result of the primary operation. He thought that in the second case he had reported he had erred in not following this practice.

THE PRESIDENT instanced as in point a case where he had removed the second ovary because it contained a large hematoma, although before the operation he had promised the woman he would not remove both organs if it could be avoided.

DR. CHAMBERS believed it our duty always to give the patient the benefit of the doubt, and to try to save the second ovary, if at all possible. He was familiar with a number of cases where, there being doubt as to the condition of the second ovary, it had been left undisturbed, and the patients had since remained well. Except in the face of strict necessity, therefore, he was opposed to the removal of both ovaries.

DR. DAWSON recalled a case of aggravated hystero-mania where he had removed the ovaries and the patient was perfectly well, one year after. In another instance of hystero-epilepsy and dysmenorrhea, he was tempted to do the same operation, but Dr. Hammond, who saw the case with him, called it hysteria and advised the usual remedial measures. These proved utterly ineffective, however, and when finally he did operate the patient was in such an exhausted state that she did not rally. Both ovaries were diseased.

DR. CHAMBERS stated that he had assisted Dr. Thomas in four oöphorectomies for hystero-epilepsy, and only one had relapsed to a slight degree. One woman was practically insane and recovered her intellect completely as the result of the operation.

DR. WYLIE expressed his belief that the question of the value of removal of the ovaries in case of mental affections was very much unsettled. In reference to removal of the second ovary, he would be guided by the condition of the uterus. In case this organ were healthy, he would leave the second ovary and tube, and he had done so in four instances, in two of which number conception had since occurred. In case of chronic disease of the uterus, however, he thought the second ovary, if left in, would become diseased. He did not agree with Dr. Lee in the opinion that the peritonitis following the primary operation would cause disease of the second ovary. Mr. Tait advocated the removal of both the ovaries.

THE PRESIDENT referred to the late Professor Schroeder's paper on castration for neuroses, wherein were recorded ten cases of

the kind, and in only four did the result prove anything in favor of the operation. These were ultimately benefitted, but only some time after the operation. Personally he had operated twice for this indication during the past winter. One case recovered perfectly, but the second had epileptiform seizures for one month after the operation and then began to improve. In the first instance, the ovaries were shrivelled and contracted; in the second, they were enlarged.

In regard to the removal of both ovaries at one and the same operation, although one of the organs did not seem to be much diseased, he hoped the Society would record itself in favor of leaving the not markedly altered organ, especially if the patient were sterile, and that resection or puncture of the cyst should be tried. In the case of ovariectomy during pregnancy, the specimens of which he had presented, the woman had conceived, notwithstanding the extensive alterations of both the ovaries. If we left but a portion of an ovary the woman still might conceive, and he decidedly favored giving the patient the chance.

OVARIAN CYST WITH PAPILLOMATOUS DEGENERATION OF THE INTERNAL SURFACE.

DR. DAWSON presented a specimen removed from a patient with the following history: Three years previously he had operated upon her for an ovarian cyst of the right side. There were so many adhesions that the tumor could not be entirely separated from the uterus and he had been obliged to treat the pedicle by the clamp, and inclose the right horn of the uterus in the wound. The patient did well up to thirteen months ago, when she again consulted him, thinking herself pregnant. On examination, he found a small ovarian cyst of the left side. The tumor increasing and affecting the patient's condition rapidly, he operated on the 18th of April. The uterus was adherent to the abdominal wall, and the cyst so firmly attached that it could not be budged. After much trouble, he finally liberated by enucleation all but the attachment to the rectum, which portion had to be left, to the extent of $1\frac{1}{2}$ inches, which he clamped to the abdomen. On the sixth day the drainage tube was removed and the sulcus was drained and irrigated daily. The cyst was multilocular, with black colloid contents, and its inner surface was in a state of papillomatous degeneration. At the time of the first operation, this ovary was healthy, and he asked whether it would have been justifiable to have then removed it.

DR. LEE was of the opinion that this case spoke strongly in favor of the position he had maintained in regard to the advisability of removing the second ovary.

LAPAROTOMY FOR FIBRO-CYST OF THE UTERUS.

DR. DAWSON also presented an enormous fibro-cystic tumor which he had removed six days ago from a woman aged 40. The patient's general condition was excellent, and the tumor simply caused great discomfort. He had not advised the operation, but had performed it at her urgent request. The operation was exceed-

ingly difficult on account of the many adhesions and the trouble in delivering the tumor from the abdomen. He endeavored to pass ligatures after delivery of the tumor in order to secure the ovarian vessels, but owing to the size of the tumor he was unable to draw his ligatures tight. He was therefore obliged to remove the tumor quickly and secure the vessels as best he could and as speedily as possible. The hemorrhage was profuse and collapse was most marked. She rallied from this, however, and her prospects of recovery seemed good, when the kidneys misbehaved, the urine gradually grew less in amount, containing one-third per cent albumin, and in thirty-two hours the patient died. The kidneys were healthy, as far as could be decided, before the operation, and he believed that the acute nephritis was the direct result of the ether, under the influence of which she had been for two hours. The entire uterus was involved in the growth, and the left ovary only was diseased. There was no autopsy. The tumor weighed twenty-seven pounds and was of ten years' growth.

DR. WYLIE asked how low the clamp was applied, and if it was not likely that a ureter was involved.

DR. DAWSON replied in the negative, and stated that at the time of the operation the same question had come up and that he had satisfied himself as far as possible that the ureters were not included in the clamp. He would, however, have the specimen carefully examined in connection with this point.

DR. WYLIE further asked why the operator had not tilted the tumor to one side and then tied the broad ligaments.

DR. DAWSON replied that he had stated that the size of the tumor had prevented his lifting or tilting the mass sufficiently to pass his ligatures through the broad ligaments.

DR. NILSEN recalled a similar case on which he had operated four years previously, the weight being fifty-nine pounds, and where the question had arisen as to whether the fatal result was due to involvement of the ureters.

DR. LEE was of the opinion that unless both ureters were included uremia would not kill so quickly. He was familiar with a number of cases where one ureter had been tied and where death followed, but slowly. He thought that the vessels could not always be ligated, especially when the pedicle was as large as in the specimen which had been presented. In two personal cases where the pedicle was large, he was unable to pass his ligatures.

DR. DAWSON said that the moment the tumor was removed, the pedicle was easily handled. It was the breadth of the growth which rendered the passage of the ligatures difficult.

THE PRESIDENT remarked that the condition of the kidneys before and after laparotomy should be carefully studied. He had at present under observation two cases where an acute pyelonephritis had developed in the third week after operation. Both these patients took ether, and the operations were from three-quarters to one hour in duration. He was inclined to fear ether, and to substitute chloroform in its stead whenever there was the least sign of renal disease.

DR. J. H. EMERSON read a paper on

LACERATION OF THE CERVIX UTERI VIEWED OBSTETRICALLY.

Laceration of the cervix uteri has furnished a topic for so many essays of late that my hearers may well wonder at my choice of a subject. But by far the greater number of my predecessors have discussed the various aspects in which this lesion presents itself to the operating gynecologist, and I do not propose to dispute with them the possession of that field. I desire to go a step farther back, and ask you to look for a short time at the phases of this subject presented to the obstetrician, hoping to open the way possibly to a profitable discussion of some few questions bearing upon the causation or prevention of an accident whereof the necessary subsequent treatment and the remote results have clearly indicated its claims to careful attention.

I entered upon the study of this subject with the view of learning what, if any, measures have been recommended by systematic or occasional writers on obstetrics to obviate so common and so serious an injury. For it appeared to me that this properly supplemented the amount of attention given to its other phases. Dr. Emmet does not write as an obstetrician, but as a gynecologist, and thorough and careful though his analysis is of the facts connected with this injury as presented to him and as deducible from the histories he could obtain, it was perfectly obvious to him when preparing his tables and analyses, as it must be to any one who reads his chapter with an eye to the obstetric relations of the subject in hand, that his part was done, and well done, when he had indicated the existence and nature of the lesion, and the method of curing it. If anything was to be done to render its occurrence less frequent, that task must fall to those whose province it is to watch and guide, and sometimes to interfere with a controlling hand to modify the processes of gestation and parturition.

To what extent and in what ways has the body of obstetrical doctrine been affected by the promulgation of Dr. Emmet's views? Has a recognition of their importance led to a more intelligent and careful study of the etiology of laceration of the cervix, and shown in what ways the practice of the obstetric art can be improved in reference to it? In a matter depending so much upon manipulations and methods of procedure, it is evident that the subjects of etiology, and the practical results referable to given causes, must be largely intermingled, so that often they will have to be considered together. I have sought for modifications in the teachings of representative treatises which have appeared, either originally or in new editions, in this country, England, France, and Germany during the past few years. Of course, the most recent views of experimenters and observers do not usually at once find their way into systematic works, but after their first enunciation in papers read before societies, or published in jour-

nals, they have to be subjected to further criticism or practical trial before they obtain recognition as accepted professional dogmas. The matter found in current periodical literature is, therefore, more often the expression of individual opinion or experience than the matured conclusions of the body of the profession or its acknowledged leaders; it is often largely controversial, though it is also often the source of important statistical data.

The fact that prior to Dr. Emmet's announcement of the diagnostic features of this lesion, coupled with his rational and successful surgical procedure for its relief, it was essentially unknown, renders it unnecessary for my present purpose to consult obstetrical writers of a date previous to Dr. Emmet's publication, and even since that time most of them have referred to the possible occurrence of laceration of the cervix rather incidentally to other subjects as they came under discussion, and have not given separate instructions looking to the avoidance of it by special care, as in the analogous case of danger to the perineum.

In looking for suggestions or opinions as to means of obviating lacerations of the cervix, the first inquiry must, of course, be into the causes leading to it, in other words, its etiology, and for the purposes of this paper I shall consider only possibly preventable causes. Turning to Dr. Emmet's article ("Principles and Practice of Gynecology," third edition, 1884), we read: "From *a priori* inference I had been prepared to learn that rapid labor was the most common cause of laceration of the cervix. The contrary, however, has proved to be the case, as more than thirty per cent of the lacerations were attributed to tedious labor. This proportion would be greatly increased by the addition of the forceps cases, which properly should be placed under the head of tedious labor;" and it is, I think, fair to include those also in which turning or craniotomy were employed. Still he adds: "I cannot divest myself of the conviction that rapid labor will be found, on further observation, to be a far more important factor in causing this lesion than has been indicated by this record." In addition to these causes, he cites miscarriages and criminal abortions, and raises a question to which I shall presently recur, viz., the degree to which the injury may be chargeable to "the practice of rubbing the finger round the os to excite contraction, and of stripping back the cervix from the head with the view of facilitating the progress of labor."

It cannot be doubted that those who have written since the first edition of Dr. Emmet's book appeared have not been impressed as he was with the relative danger of rapid labor as a factor in the causation of the injury in question, the majority leaning to the conclusion to which his statistics forced him. Thus Dr. W. R. Gillette ("Trans. Am. Gyn. Soc.," Vol. VI., p. 413) says: "The most serious lacerations of the cervix that have come under my observation were in women who gave the history of protracted

labors." Dr. W. E. Forrest, in a paper read before the obstetrical section of the N. Y. Academy of Medicine (*Phila. Med. Times*, Nov. 18th, 1882, p. 132), declared that "a tedious first stage is the most frequent and important cause of laceration." This he attributed to lengthening and thinning of the cervix, the os externum remaining undilated, so that its resilience was lost, causing a tendency to rupture at the utero-cervical junction or at the os externum. And in the discussion on this paper, Dr. C. C. Lee (*idem*, p. 133) said: "He found troublesome laceration in the majority of cases due to tedious labor, owing to the edematous and macerated condition of the tissues then present. Laceration seldom occurs in cases of rapid labor." Dr. M. A. Pallen's views (*N. Y. Med. Journ.*, Sept., 1881, p. 291) appear to have undergone a change similar to that stated by Dr. Emmet, for he says that "he first regarded laceration of the cervix as a result of too rapid labor, but later realized that most cases occurred in tedious labors in which forceps were used too late, if at all; after congestion and tumefaction of the cervical tissues had taken place, the uterus having lost the greater part, if not all, muscular power to make an effort at expulsion." Dr. Lusk ("The Science and Art of Midwifery," third edition, New York, 1885, p. 449) may also be quoted to the effect that "with a large, roomy pelvis, a soft, dilatable cervix, a distensible vagina and perineum, labor may be terminated by a few strong pains. Such rapid deliveries are not to be regarded with apprehension . . . but excessive straining, before the soft parts have been properly prepared for the passage of the child, may lead to lacerations of the cervix, vagina, and perineum.

It must further be borne in mind that the total number of cases which can be classed as precipitate labors is so small relatively to the number of those which have to be classed as tedious, that the quota of lacerations they could furnish would be rather insignificant. I have been able to find hardly any statistics bearing upon this point, doubtless in part because the recognition of laceration of the cervix has, in many quarters, hardly yet entered into the consideration of observers as a fact complicating or connected with parturition for a long enough period to allow data of any extent to accumulate. Then, again, in giving the figures of the duration of the successive stages of labor, it is customary to report the averages of a large number of cases, divided, perhaps, into primiparæ and multiparæ, but making no separate groups according to the length of individual labors, whether long or short. Gustav Koch, however (*Archiv für Gynäkol.*, XXIX., 2-275), in a paper on rupture of the umbilical cord in precipitate labors, bears out the general opinion deducible from the quotations already made. He gives an analysis of thirty-seven cases of precipitate labor out of a total of 3,775 confinements, about one per cent.

and says: "As regards injuries of the maternal soft parts, severe wounds of the vagina and os uteri did not occur."

Let us now turn our attention to some other points; and in order to present a systematic arrangement, I will quote from Dr. Polk's paper presented before the American Gynecological Association in 1881, with the title "Can Lacerations of the Cervix Uteri be Prevented?" He says: "We must admit that in certain difficult labors, such as with various degenerations of the cervix, pelvic deformities, large child, etc., the worst degrees even of the laceration are a necessary consequence of delivery through the natural passages." Excluding such unavoidable cases, he then groups the ordinary causes, all of which are in greater or less degree within the control of the accoucheur, under the following headings:

"1st. Precipitate labor.

2d. Tedious labor.

3d. Instrumental delivery.

4th. Manual delivery

5th. Forceful dilatation of the os with a view to the hastening of a slow labor.

6th. Early rupture of the membranes.

7th. Abnormal direction and position of the os, as in pendulous abdomen.

8th. The use of ergot."

It were vain to attempt here a review of all that has been said on these subjects even since the publication of Dr. Polk's article, for they cover some of the most discussed points in obstetric literature, such, *e. g.*, as the proper sphere of the forceps and ergot respectively, the management of rigidity of the os externum, whether by anesthetics, by venesection, by manual or hydrostatic dilatation, by incision, etc. In regard to others, there is substantial agreement among writers of authority, and I must, therefore, content myself by referring to a few which have certain elements of interest.

It seems as if a comparison of obstetric accidents, as they come under observation to-day with those of twenty-five or thirty years ago, would illustrate some of the results of recent obstetric and gynecological teaching, especially regarding the early use of forceps. Certainly the tendency of modern teaching has been in favor of early application of the forceps. This teaching was doubtless in great measure influenced and enforced by the proof furnished by Emmet and others of the great dangers of long delay as producing vesico- or recto-vaginal fistulæ, from sloughing due to pressure. If I may argue from my own limited experience in the out-patient department of the New York Hospital, such fistulæ are now very rare accidents. I believe but two cases of vesico-vaginal fistulæ have come under my observation there, out of upwards of a thousand patients, and in proportion to the

cases of lacerated cervix the number is trivial. Is it not possible that, sustained by such teaching; and with the laudable desire to avoid such dangers as follow in the wake of long delay, physicians may sometimes err in the other direction, and by resorting to forceps prior to full dilatation of the cervix often cause its laceration, an injury at the present, to be sure, much more venial in professional eyes than a fistula, and, indeed, less palpable? I believe I correctly report my friend, Dr. Partridge, in saying that his observations point towards such a conclusion.

To obviate all confusion as to the relations of the question just suggested, it may be permissible here to ask whether it has been clearly enough kept in mind, or say pointed out distinctly enough, that laceration of the cervix is, as its name implies, a *tear*, not a solution of continuity, usually the result of chafing and wearing, or of sloughing either, but uniformly due to the forcible passage of a body through a canal which, at this place and at this time, is either so small or so inelastic that its margin suddenly sundered under the strain? True, the physical constitution of the cervical tissues at the time may be due, as pointed out by Wylie (*AM. JOURN. OBST.*, Vol. XV., 1882, p. 76, et seq.), and Van de Warker (*idem*, p. 103, et seq.), to faulty development, to various degenerative changes of long standing, to the presence of cicatrices, or even, as indicated by Barnes ("System of Obstetric Medicine and Surgery," Phila., 1885, p. 614) and others, to changes in the circulation of the part dependent on the circumstances of the particular labor, but still it is properly described as a tear that takes place. Says Barnes (*loc. cit.*, p. 609): "*Laceration or rent* occurs when a breach begins at the edge of the os uteri and extends."

While, as I have said, the early use of the forceps in tedious labor has been generally advocated by systematic writers, and some, as Mundé (Appendix to Cazeaux and Tarnier's "System of Obstetrics," Phila., 1886, p. 1149) and Lusk ("The Science and Art of Midwifery," 3d Ed., Phila., 1885, p. 368), teach that their skilful use may prevent laceration of the cervix, the employment of various other agencies, especially in rigidity of the os externum, is being constantly brought forward by occasional contributors to the journals. Among these we find Gillette (*loc. cit.*) advocating digital dilatation in the early part of the first stage, as a rule, "so as to avoid the dangers incident to protracted and powerless labor." Also Forrest (*loc. cit.*) believes that in a tedious first stage, after giving "chloral and morphine in good season and in moderate doses, gentle digital dilatation of the os externum is a very important means." W. E. Boardman (*Boston Med. and Surg. Journal*, Aug., 1886), in a thoughtful paper on "Rigidity of the Os Uteri," advises manual dilatation to overcome it. On the other hand, Lusk, in the discussion on Forrest's paper, is reported as saying that

he did not believe that digital dilatation of the cervix was often justifiable, and Parvin ("The Science and Art of Obstetrics," Phila., 1886, p. 404) is quite emphatic in reprobation of the practice in the first stage, saying, after referring to Gillette's method, "The dangers of septic infection by these dilatations, as well as those of the vulva, and by all unnecessary examination and manipulation, have been strongly presented by Spiegelberg in considering the prophylaxis of puerperal septicemia: "Care must be taken that labor goes on as simply as possible; manipulations in the genital passages are to be made only when absolutely necessary. Nothing is more objectionable and more repulsive than the almost incessant exploring and manipulating in the vagina, the os uteri, and the vulva, which most midwives are in the habit of doing when the labor does not progress as rapidly as they desire. The danger in this for the puerpera cannot be too strongly emphasized." "In conclusion, the student may be assured that digital dilatation of the os uteri or of the os vulvæ is rarely necessary, in most cases does no good, and in some may cause great evil." Regarding the second stage, however, Parvin is in accord with Spiegelberg ("Lehrbuch der Geburtshülfe," 1878, p. 618) who says that threatening laceration may ultimately be prevented by pushing back the margin of the os as it is forced down over the presenting part of the child. Albert H. Smith (*Med. and Surg. Reporter*, vol. 37, p. 101) while regarding all local efforts at dilatation as utterly inadmissible in spasmodic rigidity of the os, yet concedes their utility and value in cases of physical rigidity due to tissue changes.

Another expedient for overcoming that condition of the os externum which threatens laceration is incision, and this has recently found an earnest supporter in Engelbach (*Nouv. Arch. d'Obstet. et de Gynéc.*, 1887, No. 2, p. 91), who regards it as the proper treatment when the rigidity does not yield to the ordinary measures, and in this he but follows the advice of Spiegelberg (*loc. cit.*), while Lusk (*loc. cit.*, p. 454) enters a decided protest against the practice, saying, after prescribing the proper use of the forceps in protracted first stage so as to avoid laceration: "I have purposely avoided making mention of incisions through the vaginal portion of the cervix, as, in a large experience of difficult labors, I have never so far seen the occasion for their employment." Albert H. Smith also is again found upon the conservative side here as with regard to digital dilatation. He says (*loc. cit.*): "One measure which has been recommended by English and French obstetricians in every form of rigidity I cannot too strongly deprecate in this form (the spasmodic) as utterly unjustifiable: this is *incision* of the cervix uteri." And again: "I would limit incision to cases of cicatricial occlusion of the neck."

Ergot is the last of the causes of laceration of the cervix as enumerated by Dr. Polk, and he expresses the hope that under

the influence of improved teaching its use will be gradually supplanted by the forceps, which is safer. This drug is undoubtedly still chargeable with a large proportion of the cases of lacerated cervix, and proof of its capacity for mischief may be found in the fact that Joseph Taber Johnson ("Trans. Am. Gynecol. Soc.," VII.), and Engelmann ("Trans. Am. Gynecol. Soc.," VIII.) thought it worth while to make its abuse the subject of essays read before the American Gynecological Society in successive years, while Reamy (Cinc. *Lancet and Clinic*, 1886, N. S., XVII.) declares that "it is still the most generally abused agent in obstetric practice." When it is stated that seventy per cent of labors are attended by midwives, that these women always carry ergot about them, and very frequently use it, there is no wonder that we see so many torn cervixes, even were it not a fact that the drug is still used freely and early by a large part of the profession also. Dr. Reamy's paper, with its accompanying bibliographical review, brought out very strikingly the gradual increase in the limitations put upon the use of ergot by writers of authority since its first introduction until now, *e. g.*, it is absolutely forbidden in so noted a hospital as the Rotunda, Dublin. Reamy, Parvin (*loc. cit.*, p. 444), A. H. Smith (*loc. cit.*), and other good authorities do not go so far as this, however, but permit its use in certain circumstances, even before the third stage of labor, in small doses, on the theory, as stated by Reamy, for which he refers to H. C. Wood as authority "that small doses, a few minims of the fluid extract, or a single grain of the solid extract, will only increase the force of the uterine contractions and not affect the periods of relaxation; in other words, will not disturb rhythm in action." It appears to me that this theory is hardly sustained by so recent and good an authority as Brunton ("Pharmacology, Therapeutics, and Materia Medica," Philadelphia, 1885, p. 911), for he says: "The contraction of the uterus caused by ergot is not usually so much rhythmical as *tetanic* in nature, with occasional increases in violence. There is no complete relaxation between the spasms as in the ordinary labor-pains. . . . It does not increase the power of the labor-pains, but only the tonic contraction of the uterus." So that one may not be free from anxiety lest the child may be asphyxiated, even if small doses only are given in the interest of the cervix.

Cocaine needs but a few words. It has not taken the place in obstetric practice that its early advocates looked for. Apropos of the subject of lacerated cervix, it was hoped that it would favor dilatation in rigidity of the os externum by relieving the pain. According to Jeannel (*Nouv. Arch. d'Obstét. et de Gynéc.*, 1886, No. 4), Dubois and Doléris found it effectual in relieving pain in some cases; but it was soon learned that corrosive sublimate decomposed the cocaine, and rendered it inert. Jeannel advises a five-per cent solution painted on the cervix by the aid of a specu-

lum. Parvin (*loc. cit.*, p. 398), on the other hand, reports negative results when it was tried at the Philadelphia Hospital. The objections to its use are the necessary exposure and admission of air to the vagina and cervix, and the need of giving up the bichloride solution as an antiseptic if it is employed.

The time limit forbids me now to add to these quotations and the commentary that accompanies them. It appeared best to me, in preparing a paper which was strictly one of obligation, to present the subject chosen as viewed not by myself chiefly, but by others, who have most of them established a right to speak with authority, and to give prominence to those points on which there was a decided difference of opinion, so as to furnish a basis for discussion. I will then, in closing, briefly note the following as subjects which invite the expression of opinion, viz.:

The influence of rapid labor.

The relative infrequency of fistulæ.

Digital dilatation in the first stage.

The practice of incising the cervix.

The use of small doses of ergot.

In opening the discussion, DR. WYLIE stated that there was one very important point on which sufficient stress had not been laid by the reader of the paper, and this was the condition of the cervix before labor as regards development and disease, factors which he was satisfied carried great weight in the etiology of laceration of the cervix. Disease of the deep-seated follicles was a cause, and the resulting tear, even if slight, gave rise to symptoms, and required treatment.

DR. PARTRIDGE remarked that there were two classes of influences calculated to produce laceration of the cervix—*predisposing*, such as cicatricial tissue in the cervix, and inflammatory or edematous changes due to protracted labor, which prevent physiological dilatation; *exciting*, such as digital, instrumental, operative, and medicinal means improperly employed with a view to shorten labor. It was with great hesitation that he employed these latter means to hasten labor in the first stage. It was true that delivery might take place more quickly, but it was apt to be at the expense of the integrity of the cervix.

He thought that the application of the forceps before the *entire* dilatation of the os was a major operation always. When the instrument was applied within the cervix, as soon as traction was made, the shank of each half near the blade began to pinch the cervix between it and the pelvic wall. This pinching and bruising was extremely apt to effect a solution of continuity of the cervix, bilaterally.

He did not mean to decry the use of the forceps, but he was somewhat slow to employ the instrument before the head had escaped from the cervix.

During the delivery of the head under these circumstances, most careful observation would not usually recognize the tearing as it occurred, nor would examination immediately after labor enable the examiner to always recognize the laceration. A month or two later the physician might be surprised to find it.

For this reason he felt that hospital experience, either maternity or gynecological, did not afford the best facilities for observation. Private obstetrical and general practice, in which careful attention was bestowed after delivery for weeks, months, or years, afforded the means for establishing the relation between obstetrical and gynecological lesions.

He believed with Dr. Emerson that, since the teaching had been to use the forceps frequently, we saw fewer cases of recto- and vesico-vaginal fistulæ, and many more cases of cervical laceration. He had no confidence in cocaine to relieve labor pain or to hasten dilatation, and could not believe it prevented, in any way, laceration.

He believed it was true that rapid labors were not productive of cervical laceration as much as protracted ones were, and was glad to learn that statistical tables supported this view.

He thought it very probable that one reason lay in the fact that in short labors the attendant is not tempted to make digital or other manipulations about the cervix, while in delayed labor these manipulations, which, when improperly made, he believed, tended to cause laceration, were likely to be employed.

DR. MURRAY differed with the reader in regard to two points. He did not think that digital manipulations, as recommended by Gillette, should be condemned. All that was aimed at was to dilate symmetrically and to push the anterior lip of the cervix above the head in the pain intervals, and this would not tear the cervix, but would enable the head to pass more readily. As for the forceps, the use would not lacerate, but the misuse and the misdirected traction.

THE PRESIDENT inquired if Dr. Murray would not grant that the cervix might be lacerated if the forceps were applied previous to complete dilatation.

DR. MURRAY granted this, but stated that he was referring purely to avoidable laceration. He could not, furthermore, accept the statement that the forceps ground the cervix, and thus favored laceration. He believed that the tear rather resulted from premature resort to the instrument, or from forcible traction in a faulty axis.

In closing the discussion, DR. EMERSON said that his statements in regards to digital excitation of the cervix as a cause of laceration did not imply as much as the previous speaker seemed to think.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 7th, 1887.

The President, THOMAS M. DRYSDALE, M.D., in the Chair.

DR. B. C. HIRST read a paper on the etiology and treatment of cases of so-called

LATE INFECTION IN THE PUERPERAL STATE.

He said: The title of this paper is, I fear, too pretentious. Its object is merely the brief relation of four cases of so-called late infection of the puerperal state, all, I believe, due to the same cause, all yielding to the same treatment, and conveying, therefore, a lesson of some little interest and value. The first case was a young primipara, delivered without difficulty after a moderately long labor. She left her bed on the eleventh day, having had no fever and having manifested no unusual symptom. Two days afterward, her cervix was exposed to view by means of a bivalve speculum, and a slight laceration was discovered, healing by granulation. The following morning, the fourteenth day after delivery, the patient was unwell, her temperature was 102°, large doses of quinine were given, but the temperature rose to 103°, where it remained with slight morning remissions for two days. A more careful examination being made, it was discovered that the uterus was unusually large, that the os was patulous, that there was a foul-smelling discharge and considerable abdominal tenderness. The history of the case with these symptoms pointed to the retention of the membranes, possibly a portion of placenta and their subsequent decomposition originated by the admission of air to the vagina and uterus by the use of the speculum. Acting upon this diagnosis, the uterine cavity was slightly scraped out with a dull curette, and a large quantity of decomposing decidua removed. This was followed by an intrauterine injection of bichloride of mercury through a Bozeman's double catheter. The woman's temperature at the time was 103°. The following morning it had sunk to 99°, and within twenty-four hours was normal, and so remained.

The second case was also a primipara. The labor was terminated by the forceps. Upon the eleventh day the woman, although perfectly well until that time, had a morning temperature of 101°, rising in the evening to 102°. The uterus was found larger than it should have been. The os was patulous, and there was a fetid discharge. Profiting by the experience gained in the first case, the uterus was curetted, and a considerable amount of de-

cidua removed, and an intrauterine douche given. In this case, the womb almost at once contracted, and the discharge ceased; but the patient had, unfortunately, an exacerbation of a tubercular trouble in one lung, which kept the temperature high for some days.

In the third case, also a primipara, after an instrumental labor and an apparently normal lying-in, the temperature rose on the twelfth day to 99.8, and on the following to 100°. At the same time, a fetid muco-purulent discharge made its appearance. In this case, a very large quantity of decidua membrane was removed, and the scraping was repeated on the following day, whereupon the temperature fell to normal, and the discharge ceased.

The fourth case was a primipara, who on the sixth day, after an easy labor, had a temperature of 100°, although previously there had been no fever, the uterus was very large, the os quite patulous, but in this case there was not much discharge. The same treatment was employed that had proved successful in the other cases, with the result of reducing the temperature within twenty-four hours to normal, where it remained.

Now this experience is entirely too limited to enable one to come to a definite conclusion as to the cause of late infection in the puerperal state, but these cases suggested to my mind the possibility, at least, that the retention and subsequent decomposition of shreds of membranes or fragments of placenta will be found to be the most frequent cause of fever late in the puerperal state, and that, if not interfered with, this condition may lead to septicemia and pyemia. Other causes of fever late in the puerperal state are, of course, well known. Partially healed wounds of the cervix, vagina, and perineum may be torn apart, and the fresh wounds thus produced may give entrance to the germs of septicemia. Exposure to an atmosphere impregnated with emanations from sewers or water-closets from bad sanitation may give rise to febrile diseases at any time during the puerperium, as proved in the cases related by Dr. Playfair in a recent English journal. There is a possibility that the pyogenic micro-organisms, which may carry on their work in the uterine cavity without very serious consequences to the patient, may in the tubes manufacture their product, pus, in such quantities that it cannot be drained off, thus producing an abscess that may possibly open into the peritoneal cavity. There is still a more remote possibility that a pyo-salpinx may be developed late in the puerperium by other pathogenic micro-organisms, by those of gonorrhea, of tuberculosis, or even those of actinomycosis. Finally, any of the febrile diseases that may attack a woman at any time may fasten themselves upon her during the lying-in period, but, as I have already said, it seems to me that the most common cause of late infection in the puerperal state is the decomposition of retained

membrane or fragments of placenta, and that therefore the curette and the intrauterine douche might be employed as a routine treatment in all cases where these occur late in the puerperium, fever associated with a large uterus, a patulous os, and a foul-smelling discharge. This treatment can do no harm, but may effect much good. My own experience in this direction is, however, limited, and upon this point I would like to have the opinion of the Society, whose experience, collectively and individually, must be greater than my own.

THE ANTISEPTIC PAD.

DR. HIRST exhibited the antiseptic pad used by Richardson, of Boston, and Garrigues, of New York, to prevent the entrance of pathogenic germs to the vagina after labor.

DR. PARVIN must confess that he was not impressed with the necessity of the antiseptic pad, believing that as good results could be had from antiseptic napkins. The oiled silk or muslin used in making it, it seemed to him, might hinder the ready escape of the lochia. After labor, the vagina is practically a closed canal, open only for the egress of uterine discharge, and disease germs cannot enter unless that canal be opened by some manipulation of the nurse or the physician, as in giving a vaginal injection or in making an examination. It seems to him needless to completely close the vulva, and it also seems possible that such closure hinders the escape of the lochia. But be this as it may, if the vulva is carefully washed twice a day with an antiseptic solution, and if napkins, that have been wrung out of a 1 to 2,000 corrosive sublimate solution, are applied over it, changing them more or less frequently according to the amount of the flow, he thinks as good results can be had as by using the antiseptic pad. Moreover, it seemed to him doubtful whether antiseptic pads, though they have proved very useful in maternities, will be readily accepted in private practice, especially in the country.

In regard to the results in hospital practice from the use of antiseptics, he has no doubt of their value, and should insist upon their employment. So, too, in private practice he has used them, and has for some years, but it is only comparatively recently that he has learned how they should be used.

He objects to the glass tubes for intrauterine injections. Take, for example, Chamberlain's, and especially that of the late Albert H. Smith, and they will be found too large for use in some cases where injections are required. Then, too, the liability of glass to break is to him a conclusive argument against the introduction of an instrument made of this material into the uterus or into the vagina. The best instrument, he believes, is Bozeman's catheter. Formerly it was his custom to wait in cases of septic infection until the flow was offensive, and then at first to endeavor to correct the condition by vaginal before resorting to uterine injections. He now knows that it is wrong, for the patient may perish or have a protracted illness, and then make but partial recovery without the lochia at any time having an offensive odor. Within a year he has seen in hospital practice and in consultation eight cases of septic infection, where the happiest results were promptly had from antiseptic solutions injected into the uterus.

Most, if not all, of these patients probably would have recovered without these injections, but their recovery, judging from similar cases previously observed by him, would have been slow, possibly imperfect, and after a more or less prolonged period of suffering upon their part, and of anxiety on the part of the practitioner. We have in antiseptic uterine injections the essential and the almost invariably successful treatment of puerperal septicemia, if this treatment be begun soon enough and properly carried out.

DR. BARTON inquired if the antiseptic pad was applied dry or moist.

DR. T. M. DRYSDALE, while conceding the importance of antiseptic precautions in hospitals, thought the advantage of these measures in private practice more difficult to prove. Until he relinquished obstetric practice in 1874, he had met with but five cases of puerperal fever in over two thousand deliveries, and in none of these women were any antiseptic precautions used other than cleanliness, as they were not then known.

DR. LONGAKER believes with Dr. Hirst in the great utility of intrauterine post-partum medication. Dr. Hirst has neglected to notice an agent in which he, Dr. Longaker, has the greatest confidence—iodoform as used by Ehrendorfer, of Vienna, in the form of one hundred grain pencils. One of these is introduced into the cavity of the womb after irrigation; it dissolves very slowly, and continues to medicate the entire utero-vaginal canal for forty-eight or seventy-two hours.

In removing shreds of membrane, after labor at term or after an incomplete abortion, he uses the finger, and prefers it to any form of curette he has used. Theoretically he would prefer a glass tube for intrauterine irrigation, chiefly for the reason that it is more easily cleansed and kept clean. Hitherto he has always used the Bozeman canula, the only objection to which is the difficulty of cleansing, and hence a possible danger of carrying sepsis from one case to another.

DR. BAER emphatically indorses what has been said in favor of Bozeman's tube for intrauterine irrigation, and against the glass tube. The return current is sure, and the small size of the instrument, as compared with the glass tube, renders the introduction easy and safe.

Regarding the pad exhibited by Dr. Hirst, if he believed the theory that the atmosphere is constantly impregnated with germs which poison whenever they come in contact with open vessels, I would certainly advocate the use of an impervious covering for the vaginal orifice. For the theory teaches that where there is no contact with the air there can be no sepsis. But he does not believe this fully. Therefore he thinks it safer to place the napkin under, and not over the vulva, so as to permit as perfect drainage as possible, thereby giving free exit to the lochia by making of the vagina a drainage tube, its natural function after parturition.

DR. HIRST remarked that the pads were used dry by Dr. Richardson, and moist by Garrigues.

LABOR COMPLICATED BY LARGE, HARD HEADS.

DR. M. PRICE was called to this patient three weeks before her delivery. She informed him she was in labor, and that her time

had expired. Examination showed the cervix but little dilated, the os not being larger than a silver quarter. There was quite a discharge from the vagina. The pains were at short intervals, and were unquestionably labor pains. The woman was in good condition, and he had no doubt that labor would go on. He left, giving instructions to send for him if the pains increased, and that, if not sent for, he would call next day. He had attended this woman in two previous pregnancies, both children being large and the labors tedious, so he anticipated that this one would be a slow labor. The next day the pains were less than on the previous day, and there was no change in the cervix. He did not hear again from her for three weeks, when the husband called, and stated that his wife had been in labor all night and all day. He now found the cervix wide open, but the presenting part of the child so high up that he was not able to say what part was presenting. Passing the entire hand into the vagina, he found a vertex second, but the head would not engage. After waiting two hours, he found the head had been pushed to the side of the pelvic inlet with the occiput resting on one side and the neck and shoulders on the other, and determined to ascertain the difficulty. He pushed his hand up into the womb, and had no difficulty in bringing the head back to its first position, but found that it was completely ossified. There was no pulsation in the cord that he could detect, and he at once decided to deliver by turning, as he thought he could deliver the child in that way sooner than in any other. He at once secured the feet, and soon had the body and arms delivered. The forceps were applied to the after-coming head, and it was delivered after quite a pull at the superior strait, but with ease through the soft parts without the instruments. There was no injury to the mother, and she made a rapid recovery. The child was still-born. Its head measured sixteen inches in occipito-frontal circumference. There can be no doubt that the mother's pelvis is much above the average size, as a head perfectly ossified could not have passed through a pelvis of less than sixteen and one-half inches; the soft parts would take up at least one-half inch. Standard authorities give the circumference of the female pelvis at the inlet at from thirteen to thirteen and one-half inches.

ABDOMINAL SECTIONS.

By JOSEPH PRICE.—In reporting a mixed group of cases treated by those methods of which Mr. Tait has been the first and chief advocate, I desire to make brief reference to Dr. T. Gaillard Thomas' article on "Laparotomy as a Diagnostic Resource," published in the *Medical News*, Philadelphia, December 11th, 1886. Therein Dr. Thomas expresses in full Mr. Tait's views. They are simply, without the mention of Mr. Tait's name, an embodiment of the views given vent to by Mr. Tait while on a visit in America in the autumn of 1884. Dr. Thomas would select the text of Mr.

Tait's law, his own axiom, as a motto for the walls of a hospital devoted to abdominal surgery: "When a doubt as to the diagnosis of an abdominal neoplasm of serious character, or of certain obscure pathological conditions of the abdominal cavity which threaten life exists, give the patient the benefit of exploratory incision." Mr. Tait, in like clear and terse English, expressed the same view in a clinical lecture at the hospital of the Jefferson Medical College, September 15th, 1884, when he said: "My experience teaches me that 'it is a surgical crime to allow a patient to go to her grave without operation, where it offers a possibility of relief.'" Dr. Thomas, with great frankness, reports five cases as examples of the class in which he had to regret non-interference on his part, cases in which "we" or "I" decided against operation, the patients died. Further he says: "I regret to say that I could more than double the number of cases illustrating this part of my paper. Few such cases occur to me now, for the very reason that I am a strong advocate for exploratory incision as a diagnostic resource." As to another class of cases in which Dr. Thomas meets with happy results, he reports as follows: "There is a class of cases in which, in my hands, explorative incision has yielded such brilliant results that I shall devote full consideration to it—I allude to cases of ascites in the female." Mr. Tait, in the address I have referred to, gave as an example in point a case operated upon four years previous. "The patient, a young lady, had an enormously large abdomen, due to ascites, a fact I had recognized. I opened it by incision for exploration and drainage; by this means the fluid is evacuated just as well as with the trocar; but you cannot feel anything with a trocar; but with a clean cut of two or three inches you can introduce one or two fingers, and find out the actual condition of the pelvic organs as you can in no other way." The pioneer work done by Mr. Tait, his influence in exploratory work, and treatment of diseased conditions of the tubes is referred to by Mr. Greig Smith in a very fair and generous spirit: "Tait's name is mainly connected with inflammatory diseases of the tubes, and his influence has been strongly felt in the substitution of operation for actual disease as against vague nerve symptoms." I am strongly of the opinion that an incision which admits only two fingers and not the whole hand is a sufficient incision. Dependence upon fingers skilled in manipulation will serve best and effectively guard against danger in any pelvic operation. Herein I differ with Dr. Thomas, who urges: "Make an incision which will admit the whole hand; one which will admit two fingers only is hardly warrantable." There is great danger, in multitude of fingers, of irritating the bowels with the hand, and further running great risk by exposure.

Many fatal results attend men beginning the study and practice of surgery of the abdomen. This is illustrated by the state-

ment of an abdominal surgeon: "I do not count my first thirteen cases, because I was learning how to do it." In this there was considerable Rip Van Winkle arithmetic: "We won't count this one." The present good results in the hands of young surgeons must not be attributed to the taking advantage of all the so-called "latest antiseptic improvements." In this relation I will make brief allusion to an experience, with well-trained young surgeons, six in number, doing nine pelvic operations due to inflammatory trouble, suppurating, adherent, and matted together pelvic viscera. The operations were all completed, with but one death, notwithstanding they were all bad cases.

In illustration, I present a specimen of

PYO-SALPINX

removed by Dr. Thomas G. Morton. This patient had an enormously enlarged abdomen. She had been seen by a prominent gynecologist who had plainly stated that there was no ovarian trouble, and recommended tapping, which was done. It is my impression that by the first tapping the large cyst was ruptured, the dropsical accumulation followed. Dr. Morton found upon examination, after repeating the tapping (the patient refusing any other operation), a small tumor or collapsed cyst. He refused to repeat the tapping and urged section. He kindly asked me to see the patient. Upon examination, I was fully satisfied of the correctness of Dr. Morton's diagnosis, and agreed with him in urging section. It was immediately done. Extensive adhesions had developed from theappings: free hemorrhage followed. He removed a large collapsed cyst, and by irrigation large quantities of old clot. An interesting feature of the case was the existence of two pedicles, the pelvic, and a fan-shaped one over the diaphragm and stomach. The case presented very interesting and instructive features. Result: cure.

PYO-SALPINX.

Ella DeLacy, white, æt. 18 years, on October 31st, '83 presented herself at the Philadelphia Dispensary complaining of attacks of free bleeding, and of pain in the left groin and left sub-mammary region, intensified by locomotion. On examination, the uterus was found low down and retroverted, the left ovary was tender. On June 16th, '85, vulvo-vaginal gland enlarged and tender: abscess incised and packed. On July 1st, '85, she complained of pain in the back, left shoulder, and left inguinal region. She was put on general treatment. Menstruation was normal. Nov. 9th, '85. Examination showed the uterus retroverted and the ovaries tender, vulvo-vaginal glands enlarged; abscess incised and packed. November 25th, '85. The uterus had been treated for its displacement, and this time was found in good position. Both ovaries were enlarged and tender. The right ovary was the larger, the left the more tender. February 24th, '86. Uterus drawn slightly to left.

May 25th, '86. Complained of pain on coition. January 25th, '87. Pain in right inguinal region. On examination, there were found tortuous, cystic, boggy masses filling up the whole right side of the pelvis. January 26th, '87. Dr. Price opened the abdomen in the median line, the incision being enlarged to three and a half inches on account of deep adhesions to all of the pelvic viscera. The right tube charged with pus, and the right ovary with a parovarian cyst as large as a cricket-ball, were removed, the pedicle ligated with silk, and dropped. Free irrigation was employed; the wound was closed with silk and no drainage used.

PYO-SALPINX,

reported for J. S. K. MORTON, M.D.—Mrs. T., white, æt. 36, complains of pain in right iliac region and extending down the right thigh, increased by locomotion. General condition bad. Dissipated. *Examination.* Uterus in good position; to right of cervix is a firm pedunculated tumor filling up the pelvic cavity on that side, firm, nodular, and adherent. *Operation.* January 25th, '87. A two-inch incision was made two inches above the pubis, two fingers were introduced, and everything found practically normal except the right ovary and Fallopian tube. The ovary was large as a pigeon's egg, and bound down in every direction, and apparently more cystic than normal. The tube was likewise bound down, extremely thickened, and contained fluid. After carefully examining all around the adherent mass, a point more friable than the other adhesions was found and torn up. This done, the enucleation became a matter of patience and application of judicious force, until the whole mass had been shelled from its inflammatory bed. When thus freed, the ovary and tube were brought out of the wound, and the pedicle doubly ligated as near the uterine cornu as possible, and divided with scissors. Previous to dropping back the pedicle, the remainder of the Fallopian canal in it was thoroughly swabbed out with strong bichloride solution, 18 gr. to $\frac{3}{4}$ i. Scarcely any oozing took place, and after thoroughly irrigating with water that had been boiled and carefully sponging, the peritoneal cavity was found to be perfectly dry. The incision was closed without a drain. Time: 55 minutes; death on fifth day from peritonitis.

OVARIAN CYST SIMULATING ECTOPIC GESTATION,

reported for DR. F. A. PACKARD.—Kate Faggaronni, white, æt. 29, married. Had five children; no miscarriages; labors all easy and natural, made good recoveries and nursed all her children. Menstruation regular in time and quantity until November, '86, when they were absent in November and December.

For the past month she had been bleeding freely, the hemorrhage appearing in clots, mixed with what seemed to be shreds of decidua. The breasts tingle, but are not apparently enlarged;

face blotchy; no abdominal enlargement noticed. She has had nothing like labor pains. The discharge is of bad odor. She has had no fever or chills. *Examination* showed a cystic tumor in the pelvis to right of uterus, about the size of gravid uterus of second month. *Operation.* On January 10th, '87, an incision three inches in length was made in the median line of the abdomen, just above the pubis. A small cyst of the right ovary was found, consisting of two chambers, one being filled with clear serous, the other with darker, blood-stained fluid. There were no adhesions. The cyst was removed unruptured; the pedicle ligatured with silk and returned. The cyst was about the size of a small orange, and sprang from the right ovary. The patient's condition after the operation was excellent. She had no rise of emperature or pulse, and no pain. Four stitches were removed on the fifth day and the remainder on the seventh day. There has been no return of the bleeding.

ABDOMINAL SECTION FOR INTESTINAL PERFORATION

reported for DR. FRANCIS L. HAYNES.—Mrs. M., aged 20, nullipara, had suffered for nearly a year from diarrhea, cough with purulent expectoration, and symptoms produced by uterine disease and general weakness. March 9th, '87, she was suddenly seized with severe abdominal pain, which shortly became intense in a spot two inches to the right of the median line and three inches above Poupart's ligament. The temperature varied from 100° to 104°; pulse from 120 to 140. Vomiting and purging and slight ballooning were other symptoms. The attending physicians, R. and F. L. Haynes, diagnosed peritonitis from intestinal perforation. As the patient gradually became worse, Dr. Jas. Price made abdominal section on March 14th. The intestines were found matted together. They were washed and wiped with sponges. Two pieces of fecal matter, each about the size of a pea, together with some serum, were removed from the cavity. The abdominal pain and swelling now diminished, and by the third day after the section had entirely disappeared. The temperature gradually sank to the normal. On the seventh day, the patient became delirious, collapsed, and died on the morning of the eighth day after the section. No autopsy was allowed. It was thought that general tuberculosis was the cause of death.

(To be continued.)

TRANSACTIONS OF THE OBSTETRICAL
AND GYNECOLOGICAL SOCIETY
OF WASHINGTON.

Stated Meeting, March 4th, 1887.

DR. S. C. BUSEY, *Vice-President, in the Chair.*

DR. F. C. FERNALD read a paper on

PUERPERAL INSANITY.¹

DR. SAMUEL S. ADAMS opened the discussion. He said that having concluded that collective investigation was the only way to arrive at a correct conclusion, he had searched the literature on the subject, and had also written to the gentlemen in charge of the various hospitals in this city with the view of securing as full statistics as possible.

Dr. Adams read the histories of three cases reported by Zinke, of Cincinnati (*Obst. Gaz.*, Vol. VI.), and remarked that one of the cases seemed to have been rather an outbreak of anger than of mania. While the woman was being delivered by forceps, without any anesthetic, she became obstreperous and profane, but became rational soon after delivery.

These cases, however, attracted considerable attention, and a committee of three was appointed by the Ohio State Medical Society to investigate the subject. Dr. Knight, of this committee, advanced the theory that the mania was due to the abstraction of phosphorus from the mother by the child. Experiments in the exhibition of phosphorus in 16 cases, as a preventive, were made, but the results were not satisfactory.

A "neurotic predisposition" has always been ascribed as a cause.

Cases by Blackman, of New Orleans, Reeve, of Dayton, Ohio, and Fraser, of Glasgow, were also cited.

Dr. Adams then gave the notes of five cases occurring in the practice of Dr. P. J. Murphy, of the Columbia Hospital. Three of the cases occurred in the hospital and two in private practice.

During nine years, 1,149 women were delivered in Columbia Hospital by Dr. Murphy. Cases of puerperal mania, three—one white and two colored. Two were primiparae. The causes of mania were unknown. One was sent to St. Elizabeth, one was removed by friends in a state of melancholia, and one recovered. All were violent and required restraint and alimentation per rectum. Sodium bromide and chloral hydrate, each 15 grains every four hours in milk, seemed to control the paroxysms of violence. It required constant supervision and an attendant to prevent the suicide of the woman that recovered. The marked symptoms of insanity passed away in four or five days after the first manifestations. In one case the maniacal tendency developed on the seventh day after delivery; in one on the fifth day, and in this

¹ See original articles in this number.

case a fibroid tumor of the uterus existed, presenting the appearance as if a second fetus occupied the uterus; and in the other case the mania appeared on the sixth day, an eruption resembling varicella occurring at the same time. The last case required watching continuously, for when permitted to awake sufficiently to recognize surrounding objects she would tear the bed-clothing, defecate and urinate involuntarily, and, in a word, presented all the symptoms of acute mania.

Of the cases in private practice Dr. Murphy says:

Mrs. B., white, aged 40, was delivered of her fourth child after a normal labor. She had not nursed the other children and begged that she might be allowed to raise this one by the breast. On the twelfth day following delivery, and when in apparently good health, she took a peculiar dislike to the child, her eyes became glassy, and her face presented the appearance of a maniac. She refused food and it became necessary to anæsthetize her in order to give a nutritive enema, and the chloral and bromide solution mentioned above. She was, nevertheless, sleepless, with a tendency to escape the nurse and jump from the window. She lost flesh and strength, and sleep came only with exhaustion. He believed the cause of the disease in this case was the attempt to nurse the child by a woman of delicate organization, nervous and irritable.

Case 2.—Mrs. T., white, aged 42, the mother of six children, had mania following the birth of her last three children, and was obliged to be confined in various insane asylums during her aberrations. Precautionary measures were taken a month prior to delivery to avert the impending danger of mania. All the functions of the body were carefully attended to and sufficient bromide of potassium was given to control nervous excitability. On the sixth day after a normal delivery, she got out of bed when the nurse was absent and walked down-stairs in her night dress. There was, however, no suicidal tendency, and beside an aversion to the child and a persistent refusal to take food, she did very well and was herself in two months.

Dr. Adams, having asked Dr. Murphy if he had any opinion as to the etiology of puerperal mania, received the following reply in writing:

"It is an admitted fact that the puerperal state brings with it such blood changes as are not found in any other condition—increased urea and fibrin. If these products be not eliminated, the nerve centres obtaining their nutriment from the blood must be affected to a marked degree. This, of itself, would be sufficient to cause severe mental disturbance, especially in nervous, hysterical women who have either borne children too rapidly, or from any irritation whatever, either of the abdominal or pelvic viscera, been subjected to nerve exhaustion. The altered condition of the blood is, in my opinion, the *'fons et origo mali.'*

"Anemia is present in the majority of cases, though in one of the cases reported the patient was plump and fat. The condition of a pregnant woman, from the moment of conception until the period of lactation ends, is one unbroken physiological crisis, developing the various constitutional traits, not only physical, but mental, and bringing forward those marked hereditary tendencies which frequently are handed down as an heritage for better or worse."

Continuing, Dr. Adams said the statistics of St. Elizabeth and St. Ann hospitals did not furnish him with information bearing on the subject under discussion, and the gentlemen in charge of those institutions regretted that such was the case. An examination of the reports of the Freedmen's Hospital for the ten years ending June 30th, 1886, shows that there were 680 labors—50 white and 630 colored—without a case of puerperal insanity.

A valuable article was written by Dr. Fordyce Barker, but the most complete paper was by Dr. Jcs. Wigglesworth (*Liverpool Med. and Chir. Jour.*, July, 1886). The speaker then gave an abstract of the 73 cases reported in that paper, and in addition a table of 27 cases collected by himself: the former is embodied in the following table:

Table showing certain points brought out by an analysis of seventy-three cases of Puerperal Insanity.

	Insanity of Preg- nancy.	Insanity of Partu- rition.	Insanity of Lac- tation.
Percentage on total ad- missions.....	1.7	5.3	5.5
Percentage of recoveries.	60.	70.	85.7
Percentage of deaths....	20.	14.8	7.1
Percentage of incurables	20.	11.1	7.1
Average age.....	33.1	28.4	32.5
Form of mental disor- ders.....	Mania = Melancholia =	Mania + Melancholia -	Mania - Melancholia +
Average duration of re- covered cases.....	1 year	8½ months....	7¼ months.

There were three types of insanity occurring about this time in the woman's history, and he thought confusion had arisen from this source. Dr. Fernald had properly excluded the mania of pregnancy and lactation from his paper, and so he would not discuss those forms. Nor would he say anything on the physiology or pathology of the subject.

The etiology of the disease is, however, interesting, and, in his opinion, many cases are brought about by a nervous condition produced by the meddlesome talk of old midwives, giving harrowing pictures of the labors they have seen, the literature women get hold of, and perhaps more than all, seduction and abandonment.

THE CHAIR called attention to the comparative percentages of recoveries in the three forms of insanity—pregnancy, parturition, and lactation. The table presented by Dr. Adams shows that these forms of disease are more frequent and more favorable in reverse of the order named. The farther the attack is removed from the period of pregnancy, the greater the probability of recovery and the shorter the duration of the disease. The table shows, also, that the average age of the cases of insanity of parturition and lactation is less than that of the cases of insanity of pregnancy, but the difference is not sufficient to account for the lessened mortality and duration of the other classes.

He then extended the courtesy of the debate to the invited guests.

DR. W. W. GODDING said he had come prepared to listen and to hear from members of their cases before they come into his hands at St. Elizabeth. He regretted that the statistics of that hospital were not in such a condition as to be of any use in the premises.

He believes that the three forms of puerperal insanity are frequently confounded in statistics. They, however, seem to him to be different conditions, all, perhaps, dependent upon an exalted nervous state, but insanity prior to the birth of the child appears to be of an inherited type, the pregnancy being merely the exciting cause.

The insanity of parturition is the only true puerperal insanity. The conditions at this time are favorable for an outbreak; there is exhaustion of the vital powers, anemia and nervous irritability.

He thinks there is good reason to differentiate puerperal insanity from ordinary mania or melancholia. In puerperal mania there is an intensity of type. The patients exhaust early, and when there is no inflammation of the brain, exhaustion is the danger. For this reason the feeding of such patients is of the greatest importance, and he would advise easily digestible foods, as eggs and milk with wine, etc. Fatal cases usually die in two or three weeks, but if they live beyond three weeks, there is a good chance of their getting well, though they may run into dementia.

Speaking from memory, he would have said that the death-rate was about 5 per cent in those cases which were uncomplicated with hereditary insanity, and from 8 to 10 per cent in women from all causes. From hastily prepared figures which he had brought with him, drawn from the records of St. Elizabeth, he finds the death-rate 20 per cent, and that only 25 per cent are cured—a sad commentary on the curability of the disease. Some cases admitted under puerperal insanity have gone on to chronic mania, and their death from ten to twenty years after ought hardly to be said to result from puerperal mania. Such statistics are deceptive and misleading.

A point which he has often observed is that women, even in the best walks of life, make use of the most horrible profanity and obscenity during these attacks.

While it is probable that the origin of the trouble is in the genitalia, pyemia is not the cause in his opinion. The condition is one of exhaustion, the brain being irritated, not inflamed. The pulse is usually soft and not above 100, the temperature only slightly raised, and no evidences of pyemia.

Since the reader has quoted a phrase of his in his paper, Dr. Godding remarked he would say that he has always fought against the admission of such cases into an asylum. The stigma attached to this proceeding, and the critical condition of the health of the woman should, he thought, lead the general practitioner to carefully consider the circumstances in each case before he advised such removal.

DR. S. C. BUSEY asked Dr. Godding his opinion of medicine in these cases.

DR. GODDING replied that he placed food before medicine. Sleeplessness must, however, be met with the bromides and chloral, if the heart is all right. Opiates have been of little or no value in his experience. Hyoscyamine he has found of use, but

probably the most valuable drug we have in this connection is the hydrobromate of hyosine. This had been used with good effect in a case he had seen with one of the members present to-night.

DR. BLACKBURN said he had never examined the brain of a woman dead from puerperal insanity, nor had he been able to find out exactly what the morbid anatomy is. It is probable that the changes found in the early stages are mainly accidental, such as congestion of meninges and brain, capillary hemorrhages, etc. The lesions found in the later stages are not different from those of other forms of chronic insanity, atrophy of convolutions, opacity of the membranes, pigmentation and degeneration of cells, and the remains of extravasations, in the form of blood-pigment in the perivascular spaces. The brain and membranes are said to be frequently congested in puerperal mania, while in melancholia anemia is the more common condition.

DR. G. W. JOHNSTON said that, in the case alluded to by Dr. Godding, the hydrobromate of hyosine had been given in one one-hundredth grain doses hypodermatically, and that it was the only thing which had kept the patient quiet. It worked well for some time, but exhaustion gradually progressed, and the woman finally died.

DR. H. D. FRY remarked that of the three puerperal diseases—septicemia, eclampsia, and insanity—our knowledge of the latter was the most meagre. He agreed with Dr. Fernald that collective investigation is the way to get at the facts.

He had seen four cases, with two deaths. Our imperfect knowledge of the etiology of puerperal insanity makes our treatment uncertain. The insanity of lactation is, however, the best understood, hence, the best treated. There are, also, certain predisposing and inherited causes, and probably something with a microbe for its origin, which will be understood later. He believes this just as he believes puerperal fever will eventually be classed in three or four types, each with its peculiar microbes.

One of the cases alluded to occurred in a hospital during an epidemic of puerperal fever.

He had seen the case spoken of by Drs. Godding and Johnston. She had been confined with twins several years previously. He had seen her at the outset of this attack, and found what he thought was tertian intermittent. All went well until the seventh day, when some little tenderness developed over the uterus, and the temperature went up to 101°. The fever continued in a sort of remittent form or puerpero-malarial type. There were no symptoms of cellulitis, the os was all right, and the lochial discharge normal. She was treated with intrauterine injections and uterine suppositories of ninety grains of iodoform. Large doses of quinine would reduce the temperature to normal for twenty-four hours, but the fever still recurred. The injections were discontinued; the uterus was found to be well reduced in size. She then became delirious, with lucid intervals, the eye became glassy, and she died. She had always been considered an eccentric person, and had a very nervous temperament.

DR. GODDING called attention to two very interesting papers which had not been mentioned in the discussion. One was by Dr. J. McDonald and the other by Dr. Gundrey, from studies of the

statistics of the Bloomingdale Asylum and Athens Asylum, Ohio, respectively. Both papers are in the *Journal of Insanity*.

He has seen good results from hydrobromate of hyoscyne in other cases, and has also got good effects from the amorphous hyoscyamine. In several cases, this had produced sleep, but the exhaustion continued, and the patients died. He had never used hyoscyne in larger doses than one seventy-fifth grain, and it seemed sometimes to have a depressing effect. It had failed in repeated doses in a powerful African under his care.

DR. J. TABER JOHNSON has seen five cases of puerperal insanity. Once while riding he was stopped to see a delicate woman who had suddenly become insane. It took six people to hold her, and the language she used was frightful. He finally succeeded in administering a large dose of morphia which put her to sleep, and then, with bromides, she recovered in a month.

The second case was a clergyman's wife. She also used vile language, and finally died in five or six weeks. Another case began to have hallucinations, but her mother could, at first, control her. She then took a dislike to her child and her mother, and would fly into paroxysms of rage. She was taken to the asylum, recovered, came back, and had another child without trouble.

His next case was already in St. Elizabeth. Her family begged him to see her because she had not menstruated for a year, and they were under the impression that if she could be got to menstruate she would get well. Dr. Lyon, of the hospital, thought she might perhaps have superinvolution, but the sound disproved that. Everything possible has been done for her, and now, so he has been informed by Dr. Godding, at the end of two and a half years, she has menstruated once, and Dr. Lyon has great hopes of her recovery. The last case was that of a colored woman who had had an easy labor. There had been, however, profuse postpartum hemorrhage; sleeplessness existed from the beginning, with despondency and strange ideas. He found her one day crying, and fully convinced that the devil had her. There had been some fever, but no milk; the baby died after a week. After treating her for some time, she came to him one day, and in the most secretive manner told him she had trouble with her breast, and he found a large mammary abscess, which she had concealed through all its formative stages.

THE CHAIR remarked that he considered masturbation in early life and her strong sexual desire to be predisposing causes in one of the cases mentioned by Dr. Johnson.

DR. G. WHYTE COOK related the history of two cases. One was a primipara and unmarried. He found her in eclamptic convulsions, the child having been born, but not the placenta. Thirty convulsions occurred before he succeeded in stopping them with chloroform and morphia. She was comatose for twelve hours, and on coming out of her stupor her mind was found to be deranged. Pilocarpine, to relieve the anasarca present, was exhibited, and later bromide and ergot, under which treatment she recovered in three weeks. He could not secure a specimen of urine from this case, as it was voided in the bed.

The second case ran on from puerperal insanity to chronic dementia, and was confined in an asylum. This was ten years ago, and he has lost track of the case.

DR. CHAMBERLAIN reported a case that was brought to the

Washington Asylum in which the woman declared that she had been delivered of two children and three placentæ, when, in fact, she had not been delivered at all. She died of exhaustion on the tenth day.

DR. ADAMS remarked that only two of the cases he had tabulated showed a temperature above 100°, which did not look as if septicæmia was the cause of insanity. Laceration of the cervix seems to be an infrequent cause of mania, and this subject needs further investigation.

DR. JOHNSON gave an instance illustrating the necessity of watching these cases. A patient, with suicidal tendencies, was supposed to be convalescent, and was permitted to return home and visit her relatives. She excused herself after a time, and left the room. Not returning, search was made, and she was found drowned in a well.

DR. F. C. FERNALD, in closing the discussion, said he had but little to add. In looking up the subject, he had had the same experience as Dr. Godding in the matter of statistics, having found that until recently the term puerperal insanity had included the insanity of pregnancy, of the puerperal period, and of lactation. He had, in consequence, given up the attempt to apply statistics in his paper. As to heredity, it has only been of late years that the neuroses in the family, as well as pronounced insanity, have been recognized as predisposing to puerperal insanity.

Cases have been known where uterine tumors that had arisen later in life have produced insanity in women who had previously had puerperal insanity, but he did not believe that this showed any special causal influence on the part of the uterus. The new growth probably acted by lowering the general health through hemorrhages, etc. He thought that in every case of puerperal insanity the causes were multiple, but that in different individuals there were as many different combinations of those causes. It was also significant that puerperal insanity shows itself first, in many cases, on the third or fourth day, which corresponds with the time when we would expect septicæmia.

The following statistics were furnished him by Dr. E. A. Lane, of the South Boston Lunatic Asylum, who had also given him other valuable information.

Statistics of Puerperal Insanity in Massachusetts for 1885.

Name of Asylum.	Total Admissions.	Females.	Cases of Puerperal Insanity.
Danvers Lunatic Hospital.	487	252	16
Worcester Lunatic Hospital	304	143	4
Taunton Lunatic Hospital.	59	24	1
Northampton Lunatic Hos.	128	66	2
Boston Lunatic Hospital...	93	47	1
McLean Asylum.....	91	41	1
Total.....	1,162	573	25

That is 4.3 per cent of females or 2.1 per cent of all cases.

The following is part of a letter from Dr. E. Fernald, of the Wisconsin State Hospital, Mendota: "Out of 1,708 cases, covering

admissions for eight years (952 m., 756 f.), 59 cases, or 7.8 per cent of all females were classed as 'puerperal insanity.' . . . Over 67 per cent of our cases had insane relatives not further removed than a cousin or a grandparent. . . . Nearly every case as it comes to us has a history of suppression of lochia occurring at outbreak of insanity or just previous. When we see them there is almost always more or less evidence of septic poisoning."

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, March 18th, 1887.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. W. W. JAGGARD presented a

PUERPERAL UTERUS, SHOWING ENDOMETRITIS PUERPERALIS.

History. Swede, 24 years old. Ipara. Vertex presentation. R. O. P.: First stage, ten hours; second stage, three hours; third stage, ten minutes; male child; wt. 6 lbs. 13 oz.; condition good. Severe post-partum hemorrhage, after expression of placenta; intrauterine irrigation with hot water, vinegar, finally mercuric chloride, 1:4000; perineum sutured, vaginal douche. Chill, three hours after delivery; temperature 101.8° F.; pulse rapid and feeble. Patient died four days later; temperature reaching the maximum, 103° F., a few hours before death.

The autopsy disclosed puerperal ulcers in the vagina, diphtheritic endometritis, splenic tumor, ulcerative septic endocarditis. The ovaries, tubes, and peritoneum were not involved in the inflammatory process. The case apparently corresponded to the form described by Buhl in 1861, as "Puerperal pyæmia without peritonitis" (metro-phlebitis.) The poison had apparently gained direct access to the veins, the endometritis being only a prominent symptom.

The mortality rate from child-bed fever in the lying-in wards at the Cook County Hospital is less than one-half of one per cent. Rigid antiseptic precautions have been instituted and carried out with commendable intelligence, skill, and zeal by the internes. The only criticism Dr. Jaggard wished to make was upon the use of mercuric chloride for the purpose of intrauterine irrigation.

DR. CHARLES WARRINGTON EARLE.—I think there is evidence accumulating at this time which shows that we are not certain that the decidua comes away completely, and in a great number of cases there is not only a considerable amount of this left, but also pieces of membrane, etc., etc., which no one, however careful, can detect.

Whenever a high temperature takes place on the eighth, or ninth, or tenth day, I am in the habit of washing out the uterus, and then if the high temperature continues, to curette, and in almost every case the amount brought away astonishes everybody, particularly the attending accoucheur. Sometimes two or three drachms are brought away; the temperature becomes normal in twelve hours, and a speedy convalescence takes place. I would like to ask what the experience and observation of the other Fellows of the Society has been in regard to the certainty which they feel that *everything* comes away.

I am getting together a series of cases in which I will endeavor to show that where there is a high temperature that comes on as late as the tenth or eleventh day, if it does not come down after a thorough intrauterine douche with carbolyzed water, curetting should be resorted to, and that it will in almost every case bring away an amount of material that none of us expect. In many of these cases the temperature goes down at once.

I had a case on Hoyne street, which took place in the practice of a graduate of one of our schools—a young man of excellent record, and one who is thoroughly in accord with us on antiseptic obstetrics. On the tenth day the temperature was $103\frac{1}{2}^{\circ}$ F.; an intrauterine douche did not bring it down. The next day it was $105\frac{1}{4}^{\circ}$ F. I curetted and brought away a mass of material which surprised me as well as the practitioner. The woman made an excellent recovery without a bad symptom.

DR. A. REEVES JACKSON.—It seems, to look at this specimen, that the curettement would have to be exceedingly deep; especially after the infection of the walls, you could hardly get away all the septic influence. There may have been a stage in the history of that case in which it would have been a proper treatment.

DR. CHRISTIAN FENGER.—In consultation, last fall, I saw a case of abortion, not childbirth, where part of the placenta was left. The temperature had been down for over a week and the woman was apparently perfectly well. The doctor in charge decided to curette that part of the placenta which remained. The curettement was immediately followed by sepsis that terminated fatally within a short time. So it seems that under certain circumstances curettement may open up sepsis. He curetted to remove the placenta.

DR. JAGGARD said he supposed Dr. Earle referred to Carl Braun's practice of curettement. He did not care to discuss that subject at this meeting. Certainly, in the case presented, curettement could have accomplished nothing. The poison—ptomaine, cadaveric poison, or whatever it was—had already entered the veins.

DR. A. REEVES JACKSON reported

A CASE OF REMOVAL OF THE OVARIES AND TUBES FOR FIBRO-MYOMA OF THE UTERUS.

The patient recovered from the operation. What the ultimate effect will be upon hemorrhages and the growth of the tumor cannot yet be determined.

DR. CHRISTIAN FENGER made the following remarks on

THE OPERATIVE TREATMENT ON RETRO-PERITONEAL CYSTS IN CONNECTION WITH MIKULICZ'S METHOD OF DRAINAGE. ;

It is not my intention to-night to give an exhaustive review of the entire subject of retro-peritoneal or parovarian cysts, but I merely wish to call attention to the subject for discussion, giving some of my own experiences, with a view of bringing out those of other Fellows of the Society.

The subject is that of so-called parovarian cysts, or cysts of the broad ligament, or cysts with fimbriated epithelium, and I wish to call attention to a few facts concerning them before showing specimens.

We know that these cysts are said, in a great majority of cases, to develop from the parovarium, the rudimentary sexual remnant of the Wolffian bodies; more rarely, they are said to develop from the epoöphron; finally, it is possible that cysts of the broad ligament may originate from hematomas.

The canals of the parovarium being lined with fimbriated epithelium, may account for the fact that the inside of a number of these cysts is found to be lined with this form of epithelium.

Parovarian cysts are typically mono-cysts. In this respect they differ materially from proliferating cystomas or other ovarian cysts developed in or into the broad ligament. Both classes are retro-peritoneal cysts, inasmuch as they are situated behind the peritoneum of the posterior wall of the abdomen, but the cysts of ovarian origin are more likely to have only a partial retro-peritoneal or intra-ligamentous development; that is, part of the tumor within, part outside of the broad ligament; whilst the parovarian cysts proper are more likely to be completely surrounded by the broad ligament. From the broad ligament, and separating its two layers, they commonly develop inward to the sides of the uterus and downward toward the bottom of the small pelvis.

They are usually thin-walled, lined with fimbriated epithelium or mixed fimbriated and common cylindrical epithelium; consequently their interior surface is smooth, and they contain a thin, colorless, clear fluid of low specific gravity, with no formed elements. Between the peritoneal covering and the cyst-wall there is usually a layer of loose connective tissue with but few vessels; which explains the facility with which these cysts may sometimes be separated from the broad ligaments covering them, and enucleated without the use of cutting instruments, and with very little harm.

A typical cyst of this kind should have the Fallopian tube on its outside stretched out and flattened, because the cyst develops into the little mesentery of the tube. In the same way the ovary is found stretched out and flattened on the outside of the cyst near the tube. Exceptions to these common anatomical characters,

however, are found. The cyst-wall may be thick, may become the seat of secondary growths, such as papillæ or papillomatous tumors, which, having developed on the inside of the cyst, may perforate the cyst-wall, protrude on the outside, and taking upon them a malignant or semi-malignant character, invade the general peritoneal cavity, giving rise to multiple metastatic papillomas.

In cases of this kind, the contents of the cyst are not a thin, clear, serous fluid, but resemble more or less the fluid of the ovarian cystomas, with numerous formed elements, viscid character, and hematin or blood mixed with it.

The connective-tissue layer between the cyst and the broad ligament may be loose and deficient in vessels, but is sometimes so tense as to make separation of the cyst here almost or entirely impossible, and it may contain numerous large vessels.

As to the symptoms: The cysts usually grow slowly, and do not cause any inconvenience unless they reach a very considerable size. They are usually not very tense. The fluctuation is very distinct and superficial. When such a monocyst is large, the abdomen is likely to be flat, when the patient is recumbent, as in ascites, and the percussion note is apt to change somewhat with the position of the patient, thereby sometimes making the differential diagnosis still more difficult.

The parovarian cysts are likely to burst spontaneously, but the contained fluid is so little irritative in character that peritonitic symptoms rarely follow, the thin, clear fluid being absorbed quickly and readily.

On this account, these are the cysts of the abdominal cavity which best permit of puncture or aspiration, as these trifling operations are not uncommonly followed by radical cures.

In this connection, I will describe a case which came under my observation in 1884. A girl 18 years of age came to me from Racine, who had a cyst extending above the umbilicus, and about the size of a uterus in the seventh month of gestation. She had been accused by her relatives of being pregnant, but knowing this was not the case, came on here.

On examination, I found the uterus of normal size on one side of the cyst, and in my office, with a common hypodermic syringe, I drew off and took away for examination a perfectly clear fluid, and told the patient to come down for operation. She went home to make her arrangements, and came down a month later. The cyst had entirely disappeared without symptoms of peritonitis.

In a case like this there may, of course, be a doubt as to the correctness of the diagnosis of a parovarian cyst; but it is reasonably certain that this was the case, as one of the characteristics of this class of cysts is that rupture into the peritoneal cavity causes no peritonitis, and the fluid is absorbed without difficulty.

The method of operating on these cysts we owe to Dr. Miner, of Buffalo, N. Y., who published in 1869 his operation by enucleation.

The surface of the tumor, or, rather, the broad ligament, when exposed after the opening of the abdominal cavity, is incised down to the wall of the cyst. In the loose connective-tissue layer the broad ligament is now separated from the cyst-wall. By means of the fingers or blunt instruments this separation can be continued, without the use of any force and without any appreciable hemorrhage, until the cyst is completely enucleated, and may be lifted out of the cavity. Evacuation of the cyst fluid after partial denudation of the wall, as a matter of course, facilitates enucleation.

In some cases of parovarian cysts, the development is to such an extent peripheral in the broad ligament that the uterine half of the latter is long enough for the formation of a pedicle. In such cases, the usual operation for ovarian cysts may be performed at a sacrifice of the covering broad ligament, with tube and ovary. But such a peripheral development is not the rule, and whenever the cyst is developed down upon the uterus or into Douglas' fossa, or farther away still into the retro-peritoneal space, enucleation is the only method available for its complete removal.

Difficulties during the course of enucleation arise when the connective tissue is tense and rich in vessels, necessitating dissection with the knife, and numerous ligatures. Further, if a large cyst develops deep down in Douglas' fossa or even behind the rectum, or up into the mesenteries of the intestines, sigmoid flexure, or descending colon on the left side, or cecum or ascending colon on the right side, we may find in such cases smaller or larger portions of these intestines spread over the surface of the cyst longitudinally and transversely, just the same as the Fallopian tube. It may be difficult, almost impossible, to remove the cyst-wall from the intestines in such cases and danger may arise from the fact that the intestines will not bear denudation of the muscular layers to any extent, as it easily becomes gangrenous.

The first case I met was that of a married woman, 22 years of age, from Racine, who had a cyst which had been developing for two years. It was as large as a gravid uterus at term and contained a clear fluid. When the abdomen had been opened and the covering broad ligament had been incised down to the cyst-wall, I commenced dissection with a view to enucleation, but after working about half an hour dissecting and ligating vessels, I had advanced but very little. All that I could get out of the cyst was a piece as large as the palm of the hand. Consequently I was obliged to leave the cyst, after having united the opening into it with the abdominal wound and made use of a method of drainage of which I had intended to speak this evening, the so-called Mikulicz drainage. The patient made a good recovery.

About a year ago, Mikulicz, of Cracow, proposed the following method of drainage, not only for retro-peritoneal cysts, which can be excluded from the general peritoneal cavity by uniting them

to the abdominal wound, but also for drainage in the peritoneal cavity itself. He takes a small piece of iodoform gauze, stitches a silk thread to the centre of it, and folds it up in the form of a pouch, the silk thread being inside that the pouch may be drawn up from the bottom by it. The pouch is now pushed down to the bottom of the cavity, and if nooks and corners exist, it is pushed out so as to completely fill them. In the inside of the pouch are packed strips of iodoform gauze, as many as are necessary to completely fill up these spaces.

DR. ETHERIDGE.—Do you tuck the gauze clear into the cyst itself?

DR. FENGER.—Yes, down to the bottom. Besides the disinfectant properties of the iodoform gauze applied to the entire wall of such a cyst, Mikulicz states as one of the advantages of his method, that by the capillarity of the gauze everything is brought out—fluids which glass or rubber drain could not bring out. We must remember that when we drain the peritoneal cavity with a glass drain down between the intestines or in the cavity of the cyst, we cannot always expect to get surrounding organs in so close contact with the drain as to drive the fluid out.

Further, there is this to consider: that a glass drain put down in the free peritoneal cavity has no tendency to bring out the fluid accumulated at the bottom, the intestines filled with air will simply float in the fluid and there is no pressure from without that will bring this fluid out of the glass drain, while the capillarity of the gauze is likely to help in that direction.

DR. SAWYER.—How long could it be allowed to remain in the abdominal cavity?

DR. FENGER.—I have had it remain in all these cases for about two weeks. As soon as the discharge ceases I commence first to pull out the loose gauze inside the sack. If a space is left after this has been pulled out, I press in at that dressing a little more gauze. This is gradually removed and the pouch itself is then pulled out by the thread gradually and finally. In all my cases it came out about the end of the second week.

The second case was similar to the first, inasmuch as there was no possibility, at least as far as my ability went, of getting the cyst out. It was a large cyst of eight years' development, in a woman fifty years of age from Sioux City, Iowa. A prolapse of the uterus had developed during this time and I was able to get out of the cyst, after considerable dissection, hardly more than two square inches. I used the Mikulicz drain with the same result as before. The patient was operated upon October 31st, 1886.

In the two above-mentioned cases enucleation was impossible, and we, with Olshausen, may have to class them under unfinished operations, as far as the extirpation of the cyst is concerned. But in cysts of the broad ligament, such an unfinished operation is, as a rule, followed by undisturbed and perfect recovery, and so I feel in-

clined rather to classify the above-named method of operating as a legitimate one for non-enucleable parovarian cysts, than to use the somewhat misleading and sinister term of incomplete operation.

The third case was a woman 50 years of age, in whom the cyst had taken three years to develop. The operation was performed February 2d, 1887. The outside of the cyst looked smooth in this case because the connective tissue was so loose. It was the easiest thing imaginable to enucleate it from the retro-peritoneal cavity in which it was developed. There were not two vessels to tie, and this accounts for the smoothness of the outer surface. This cyst was a typically normal one of that class, as it was covered all over with the broad ligament. The fluid was perfectly clear; no remnant of a blood-clot was present.

Now, when the cyst has been enucleated, the question arises, What to do?

I was afraid to leave this large retro-peritoneal wound without drainage, so I used Mikulicz's method, and the woman is well. It is, however, a debatable question, and in the future it is probable that in a case like this drainage will not be used.

Authorities like Olshausen very strongly recommend, even for a cavity as large as that, not to drain at all—not even to unite the surface of the peritoneum so as to exclude the retro-peritoneal wound from the general peritoneal cavity. He says that when there is no infection, no sepsis, during the operation, there will be no peritonitis, and no septicemia afterward. He also states that he usually leaves the cavity alone after these enucleations, and that peritonitis seldom or never follows as a consequence of the operation, nor do pelvic abscesses form.

This is where the matter stands, and these are the points for discussion. I must say that I do not dare to rely so fully on entire asepsis during the operation as to leave drainage out. Undoubtedly the recovery of the patient is quicker and easier without than with drainage, as very often, in the latter case, a fistula remains which may keep open for months.

The fourth case was an old and rather anemic patient, more than fifty years of age, but apparently sixty. She was pale and emaciated, and had a large retro-peritoneal cyst, located partly in the peritoneal and partly in the retro-peritoneal cavity, or, in other words, of partly extra- and partly intra-ligamentous development. As a natural consequence, the enucleation was difficult, since the peritoneal cavity was at once entered. On the inside of the cyst were papillomatous masses such as are found in smaller growths, cystomas of the ovary. These, of course, always indicate malignancy. On the inside of this cyst the surface was rough, velvety from the diffuse papillomatous condition of the entire inner wall, and in some places grown out into a large papilloma, but in no place smooth.

The operation in this case was rendered more difficult, because

the connective tissue, surrounding the intra-ligamentous portion of the cyst, was comparatively tense, and, further, because it had grown up into the mesentery of the sigmoid flexure, so as to be covered by it. When the cyst was enucleated, there was a portion of the sigmoid flexure that I was afraid of.

There is one other point beside the intestines which we should be careful to avoid in the extirpation of these retro-peritoneal cysts: that is, the ureters. As soon as we get into the neighborhood of the large vessels in the posterior wall, we must look carefully out for the ureters and locate them by palpation, as when the ureter is adherent to the cyst it may be easily torn.

Mikulicz's drainage was used in this case as in the others. The first three or four days she had no untoward symptoms, but on the fourth or fifth day she commenced to vomit, and became somewhat delirious and sleepy, and died, the temperature not having exceeded 101° or 102° F. I saw her the evening before she died, and expected, on account of the vomiting, to find peritonitis, but there were no local symptoms at all. Then I supposed it to be sepsis without peritonitis, but the autopsy showed the cause of death to be uremia.

We found in both kidneys, from pressure of the tumor on the ureters, a state of dilatation, not exactly hydronephrosis, but dilatation and subsequent atrophy, to a sufficient degree in my opinion to account for uremia: for we know that patients with so much degenerative disease of the kidneys of any kind as to almost reach the limit of secreting tissue are apt to get uremia after operation. Whether the operation or the anesthetic is the cause I cannot say, but it is a well-known fact.

After the opening of the abdominal cavity, Mikulicz's drain was laid down right between the loops of intestine, and, of course, a local but aseptic peritonitis formed along the drain. You will notice on the specimen I now present the impression of the meshes of the tissue of the drain, but outside of this a perfectly clear and smooth peritoneum.

As I remarked before, the chief point for discussion is the drainage. Olshausen does not drain in any such cases. This may be thus explained: He says that in many cases of this kind it is impossible to finish the operation. If we accept his classification, two of my cases would be termed unfinished operations; but I am certain that with an unfinished operation and a Mikulicz's drain a radical cure may be effected just as well, perhaps, as if the cyst had been taken out. This, of course, would apply only to a thin walled cyst not of a malignant character.

DR. A. REEVES JACKSON.—If I remember correctly, Dr. Miner's discovery or suggestion in regard to enucleating tumors was not originally for the purpose of removing only subperitoneal cysts, but to make possible the removal of ovarian and other tumors, in which the adhesions were so extensive as to make it impossible to

remove them in any other way. I think his first case one in which he failed to find a pedicle and so was driven to enucleate. I think he removed very few tumors in this way, because he did not find the necessity for doing it. But when adhesions were so extensive and tense that it was impossible to remove the growth, he made a slight incision around its lower portion, and then, seizing it above, after emptying the cyst, he passed a finger or suitable instrument around until he had loosened all the attachments. It was a valuable suggestion, and operators have availed themselves of it in suitable cases.

In regard to the removal of these sub-peritoneal cysts, one of the cases related by Dr. Fenger shows clearly that the operation of enucleation is not always necessary. The tapping was followed by complete cure. Tapping has frequently been successful, and these are the cases in which it is the proper method of treatment. I am aware that many hold a different opinion and advise extirpation always. If the tumor should refill after tapping and the patient's health fail, I should be in favor of removing the cyst by ordinary methods.

In regard to Mikulicz's plan of drainage, it has always seemed to me that it could only succeed in removing the thinner parts of the fluid; the more dense constituents could not be carried away as well by this method as by a tube of glass or rubber. I can see an objection to it in the possibility of a long convalescence resulting from the large fistulous opening which might be left, and which would be embarrassing for months.

In the last case, detailed by Dr. Fenger, we have an illustration of the importance of knowing the condition of the kidneys before operating for any abdominal tumor of long standing. Many operators make it a point to know that the patient passes a sufficient quantity of urine of a proper character before consenting to operate. They insist on knowing that the kidneys can do their work, and the rule is a good one.

DR. CHRISTIAN FENDER.—In regard to the remarks of Dr. Jackson, about the insufficiency of the Mikulicz's drain, I will say that I forgot to state that I do not use it now, without at the same time inserting in the centre of it a glass or rubber drain. In an operation last Autumn, in which I used the Mikulicz drain without a glass drain, I found the outside dressing dry and still about a pint of fluid at the bottom of the abdominal cavity after the patient was dead; so since that time I have always inserted a glass or rubber drain in the centre of the Mikulicz drain.

As to the remark regarding the examination of urine: Of course we always do this. In this case there was no albumin, but I cannot say that it was examined as to quantity.

In reply to the question of Dr. Jaggard as to whether I have used the drain in pelvic abscess and acute suppurative peritonitis: I have not used it in pelvic abscess, but have used it in tuberculous peritonitis, in a case last fall which looked like a tumor; there was tuberculous peritonitis with a large localized cavity or space filled with a fluid more or less serous. I used the Mikulicz drain with a glass drain, and the patient was still alive two or three months ago, and I do not know whether the drain is out yet. I have used it in other cases which show its efficiency. In a case of chylous ascites that had been tapped and had refilled, and in which laparotomy had been performed the year before and still it

had filled again, I opened and drained the peritoneal cavity, and used the Mikulicz drain with a glass tube with perfect success. I always use it in acute peritonitis, and see no reason why it should not be used in peritonitis as well as in other cases. At the time Mikulicz published his paper on this form of drainage, it was only in peritonitis that he had used it.

I fully agree with Dr. Etheridge that vaginal drainage, mechanical of course, is the most rational method because it draws best. My own experience is limited as I have only employed it twice, and both patients died. We dread the vagina as a septic cavity and the reason why we should not drain through it is fear of sepsis from the vagina up into the abdominal cavity. But I believe with our new precautions the vagina could be kept so aseptic that retrograde sepsis from it could be prevented; I believe also that vaginal drainage ought to be used more than it is, and that we may not be so afraid of it as we are.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Stated Meeting, March 10th, 1887.

The President, DR. GUSTAV ZINKE, in the Chair.

DR. A. J. MILES made the following report of

A RECORD OF THE PRESENTATION IN SEVENTY-FIVE CASES OF PARTURITION, WITH REMARKS ON OCCIPITO-POSTERIOR DELIVERIES.

Many cases of tedious labor having occurred in my obstetrical practice, an unusual number of which were occipito-posterior presentations of the vertex, led me to keep a more accurate record of recent cases than I had formerly done, carefully noting the presentation and position in each case.

With the thought that it might be of some interest to the Society, and for the purpose of eliciting discussion, I present to you to-night the record of my last 75 cases, giving the presentation and termination of the several cases with special reference to occipito-posterior positions. Out of these 75 cases, 47 were multiparæ and 28 primiparæ. 4 of the cases were twin births.

In 72 cases the vertex presented, in 4 the shoulder, in 2 the breech, and in 1 the dorsum. Of the vertex, 55 presented anteriorly, 42 in the left occipito-anterior, and 13 in the right occipito-anterior positions. 17 presented in the occipito-posterior position, 14 in the right occipito-posterior, 2 in the left occipito-posterior, and 1 in the occipito-posterior or sacral positions.

47 of the vertex presentations were delivered by the aid of the

forceps, 31 of these were in the anterior position; 24 in the left occipito-anterior, and 7 in the right occipito-anterior positions.

Of the 17 cases presenting in the occipito-posterior position, 16 were delivered by the forceps, 14 in the right occipito-posterior, 1 in the left occipito-posterior, and 1 in the occipito-posterior positions.

The number of multiparæ delivered by the forceps was 27; of these 20 were occipito-anterior and 7 occipito-posterior positions.

Number of primiparæ delivered by the forceps 20, of which 11 were occipito-anterior, and 9 occipito-posterior positions.

Rupture of the perineum occurred in 8 cases, 3 occipito-anterior and 5 occipito-posterior positions, all primiparæ.

Post-partum hemorrhage endangering life occurred in 2 cases, both following the use of the forceps; one case was a multipara, occipito-anterior; the other a primipara, occipito-posterior position.

The presentation in the first twin case was, one occipito-anterior, the other occipito-posterior, both delivered by the forceps. In the second case of twins, one presentation was right and the other left occipito-anterior, both still-born, evidence of death having occurred previous to labor.

3d case of twins; first child presented in the right occipito-anterior, and the second in the occipito-posterior position, both delivered by the forceps.

4th case of twins, the first child presented in the left occipito-anterior position, delivered by the forceps, the second was a shoulder presentation, delivered by podalic version.

There were in all 5 still-births, 3 were dead previous to labor. 1 the result of protracted labor in a primipara, aged thirty-eight years, a breech presentation, the child very large; 1 a dorsal presentation, the result of protracted labor and prolapse of the cord for six hours prior to birth.

Fracture of the clavicle of the child occurred during labor in 2 cases, both mothers multiparæ. One was in a breech presentation, the child was quite large, the fracture was not observed to have occurred during manipulation in delivery, and I attribute it to the powerful uterine contractions which were present in the case. The other was a vertex presentation with very rapid delivery, the mother having but three bearing-down expulsive pains, and in labor less than an hour from the commencement to the end. There was no traction or force resorted to, and the fracture was evidently due to the powerful uterine contractions which occurred.

The number of cases delivered by the forceps may seem large, but a majority of them were consultation cases, I being called on account of unusual delay. Especially was this true in occipito-posterior presentations, for nature requires more assistance in these cases than when the vertex presents anteriorly.

In the 17 cases where the occiput presented posteriorly, I found it necessary to resort to the forceps in 16 cases, whereas in the 55

cases presenting anteriorly it was found necessary to use the forceps in but 31 cases.

Then, again, there was rupture of the perineum in but 3 of the 55 cases of delivery in the anterior positions, while this accident occurred in 5 of the 17 cases where the occiput presented posteriorly.

Occipito-posterior positions are much more tedious and painful to the mother, and accidents more frequently happen to the child, than in occipito-anterior positions.

The adaptation of the form of the head of the child to the passages of the pelvis is not as accurate as in the anterior positions. The sub-occipital region being more narrow, very easily glides under the pubic ligaments; while on account of the greater breadth of the *os frontis*, when applied to the arch of the pubes, the descent is retarded.

Then, again, if we observe the relation which the pelvic cavity bears to possible movements of flexion and rotation, it will at once become apparent that in these positions nature has difficulties to overcome in comparison with which those attending the occipito-anterior positions are probably inconsiderable.

Another point to be remembered is, that as the occiput is posterior the expulsive power of the mother, acting on the head through the medium of the spine, is directed more toward the posterior part of the pelvis than in anterior positions, so as to impinge the vertex almost at a right angle against the lower portion of the sacrum. Then further on we meet with the resistance of the perineum, as the occiput is forced directly backward, thus augmenting the curvature of the vagina, and the occiput has to ascend from the bottom or coccygeal portion of the pelvis toward its anterior part.

The occiput must travel the whole of the posterior part of the pelvis and that of the distended vagina, a distance of eight or nine inches, instead of two and a half or three inches, as in cases of anterior positions. In consequence of these resistances, there is demanded stronger bearing-down effort, more power is required to overcome them and greater delay experienced, and there is increased danger to the perineum.

When called to these cases of protracted labor, we usually find the head already engaged in the brim, the membranes ruptured, and the os well dilated; the occiput is then driven by the propulsive forces communicated through the spinal column downward in advance of the forehead.

The onward progress of the head is arrested by the *os frontis* coming in contact with the pubic arch, and the occiput forced into the hollow of the sacrum. With each succeeding pain the occiput is rolled further back in the hollow of the sacrum, and the forehead more tightly wedged under the pubes. The progress made is quite out of proportion with the expulsive force, and the patient soon becomes exhausted, unless the

skilled hand of the accoucheur comes to the rescue. In this stage of the progress, it is apparent that one great cause of delay is a lack of flexion of the head. Flexion may be accomplished by applying the tips of two fingers to the forehead and pressing it back during a pain to retard its descent, causing the occiput to come downward and forward. Should the occiput not be changed by means of the hand or vectis underneath, it may be elevated, and thus flexion restored so the head is brought in the axis of the pelvis, when labor will go on in this position to completion. Should flexion not be effected, the position may be converted into a face-presentation, which should be guarded against.

The next delay we encounter will be the resistance of the perineum, and it becomes an important task to avoid its laceration. The best method for protecting is by pressure applied with the fingers or palm of the hand to the head while it is still covered by the perineum, gradually directing it towards the symphysis. And if the head while passing from beneath the symphysis during a pain is somewhat kept back, and the edge of the vulva pushed backwards over the head during the interval of the pains, the perineum may be preserved. Prof. Reamy's method of supporting the perineum has superior merits in cases of primipara when proper assistants are at command.

The delivery will be very much facilitated in occipito-posterior positions by the patient lying on her side after the head of the child has engaged in the pelvic cavity. The dorsal position is irrational, since in it the head must be forced, opposed to its own gravity over an ascending inclined plane of the pelvis. In the lateral position, the head of the child is not pressed directly against the perineum, and it is not in so much danger of being lacerated; besides we have better command of the perineum by the hand for its preservation than when in the dorsal position.

Especially is this true and important in forceps deliveries.

Rotation of the head into the anterior position is an important factor in the treatment of these positions, and should always be aided where nature favors that movement. Rotation may be easily accomplished when the head is free at the brim; or secondly, at the same time that the disengagement and flexion of the head is being accomplished, rotation to the anterior position may be effected, especially when we have natural rotatory forces operating in our aid.

Rotation from the third to the second position is of frequent occurrence, but not so frequent, I think, as Naegele and others would have us believe. Rotation is thought to be more difficult to effect when the occiput is in the left or fourth position on account of the rectum which, encroaching upon the left oblique diameter of the pelvis, renders it less capacious than the right. Three of the fourteen cases reported that presented in the right occipito-

posterior position rotated anteriorly and terminated in the second position.

The stage of delivery at which rotation occurred was when the forehead was being disengaged from underneath the pubic arch, and flexion of the head forward.

As soon as rotation was perceptible, it was aided by means of the forceps and directed into the second position. In two cases the forceps were removed after rotation had been effected, and labor was completed by the efforts of nature.

I believe that in a majority of cases occurring in the occipito-posterior positions the labor will require the aid of the forceps for the reasons already given in this paper. Notwithstanding I found it necessary to use the forceps in all but one of the seventeen cases reported, they were not resorted to hastily, not until the head was engaged and so impacted that it was immovable, by the force of uterine contractions which had continued in most cases for many hours, until the patient's strength was rapidly being exhausted, and she threatened with prostration or convulsions.

When the forceps are used the blades should be applied to the sides of the pelvis and guided by the hand into the most suitable position for grasping the head. Traction should be made downwards until the forehead appears beneath the pubic arch, and then only raising the forceps in order to make the vertex and occiput sweep over the perineum. If rotation is attempted, it must be combined with descent of the occiput and a corresponding retreat of the forehead.

With the forceps we draw the occiput downward and forward, at the same time that, with the point of the fingers resting on the frontal bone, we press the forehead upward and backward, directing the force of traction towards the inner surface of the thigh and groin when the desired change to an occipito-anterior position may be effected.

Too great force at rotation should not be resorted to, for fear of twisting the neck of the child, and producing fatal results.

DR. C. D. PALMER, in opening the discussion, said that while the essayist's recitals of cases possessed much interest, he had hoped that he would hear some new method of treatment of these tedious cases presented.

The first and most important matter in occipito-posterior cases is the diagnosis. If such exists, we ought, if possible, to know it to determine our methods of treatment. A diagnosis of such a position when it does not exist, it can easily be understood, may not be fraught with danger, if we watch nature and see what she will do; but a neglect to appreciate a posterior position, and the leaving of the case to nature's efforts alone, may be attended and followed by very serious consequences. No doubt external palpation should be resorted to more frequently than it usually is. The detection of the back of the child is important, for it ordinarily implies that the back of the fetal head points in the same direction.

External palpation, combined with the internal examination, thoroughly made, with the hand introduced within the vagina, if necessary, will enable us to settle the diagnosis almost surely, difficult as it may sometimes be. Errors in obstetric diagnosis are not infrequent, as can be proven by watching nature's mechanism of delivery as the head makes its exit from the vulva, the subsequent restitution, together with that of the body.

The ordinary division of cases of labor, placing occipito-posterior among natural deliveries, he thought was improper. Simply because nature is competent to effect delivery does not prove that they are natural. They are really unnatural; for mechanism is at fault, the labor is delayed, great suffering often ensues, there is a lavish expenditure of the pushing forces, the mortality of the child is greater, maternal soft parts are more certainly injured.

When we are sure of encountering occipito-posterior positions, what are we to do? In the first place, watch nature and *see what she will do*. No progress being made, we may aid flexion, in order to bring shorter diameters into the pelvic engagement, by hooking down the occiput with the fingers, possibly the vectis, while with the fingers of the opposite hand we push back the brow. Rotation, while descent is going on, may be aided by making pressure with the fingers on the pubic brow. Most of us must have been struck with the fact that rotation in many of the cases over an arc of three-eighths of a circle is effected just as the head is about emerging from the vulva—all at once, seemingly. The position of the mother is doubtless useful in aiding descent and rotation. She should be placed on that side to which rotation will, or ought to, take place—the right in right occipito-posterior, the left in left occipito-posterior positions. An anesthetic may be a help to better uterine action by diminishing pain. Delay still continuing, the patient suffering much and becoming exhausted, the forceps ought to be used. Applied with relation to the sides of the fetal head, they should be removed and reapplied if they rotate as the head descends. Applied with relation to the pelvis, rotation may occur between the blades, the forceps maintaining their pelvic relation all the while the same. In all cases, gentle traction only should be made, but little pressure being made with the handles. This method will allow the pelvis to effect rotation. Great damage to the soft parts may be done by abruptly and with undue force terminating delivery.

Dr. Richardson, of Boston, advises the adjustment of the forceps wrong: the convexity of the blades forward, and then rotating with them, so that when delivery is finally made both forceps and head are like unto the application of the instruments in occipito-anterior position. It seemed to the speaker that the soft parts were more apt to be injured by this procedure, besides the neck of the child might be unduly twisted, and finally, the consequences would be very serious if, by chance, an error in diagnosis of the position has been made. He preferred the usual method.

Posterior rotation will occur inevitably in a certain percentage of cases, the result of the natural mechanism of such positions, with the occiput well back. Here we should aim especially at securing the best amount of flexion we can, and the forceps may aid us in this direction.

Dr. Palmer thought that the essayist was fortunate in his results of posterior positions, the lives of so many children, and in the comparative rarity of perineal lacerations, if he included therein all degrees of the same.

DR. J. TRUSH thought the previous speaker had said nearly everything that was to be said on this subject. He agreed with him that a correct diagnosis is the most important point, as indeed it is in all obstetric manipulations. External palpation is important because it often leads to a correct diagnosis when internal palpation alone must fail. We all know that the landmarks given to ascertain the position of the head are often difficult to find, on account of tumefaction and overriding of the sutures. The diagnosis ought always to be made, if possible, at the beginning. At times it may be necessary to introduce the half-hand in order to reach some prominent part—as the ear, or even the whole hand—the tumefaction of the scalp being so great that neither suture nor fontanelles can be recognized, and the uterus at the same time so firmly contracted that external palpation avails nothing. The introduction of the whole hand, however, into the vagina almost always requires the administration of an anesthetic. This having been done (the hand inserted and a diagnosis made), we should at once endeavor to bring about proper rotation by hooking the fingers over the occiput, carrying the same down and directing it anteriorly; the forceps ought to be resorted to only when the hand fails, on account of the great danger which always attaches to its use by lacerating the soft parts when attempting to rotate the head with the forceps.

The speaker was struck most of all with the essayist's large percentage of occipito-posterior cases, and especially with the great number of forceps deliveries (47 in 75)—being over one-half. This is out of all proportion to statistics, but might perhaps be explained by the fact that these cases were largely from consultation practice. Another remarkable fact was the frequency with which the posterior cases rotated abnormally. According to Schroeder, only about one in seventy-five occipito-posterior cases rotates posteriorly, all the rest turning to the front. Lateral position of the patient upon the side corresponding with the location of the occiput undoubtedly facilitates rotation anteriorly; hence it is well to employ this measure. To reiterate: always first endeavor to effect the correction by means of the hand; this failing, then the forceps. But the speaker would confess that he had never yet succeeded in bringing about anterior rotation with the forceps.

DR. C. O. WRIGHT said that he had nothing to add to the methods suggested for the treatment of occipito-posterior positions, but he would like to learn the percentage of these cases to normal deliveries. In the last ten years, he had seen but two cases of the kind under discussion. In one, a prominent fellow-practitioner had been called in, and informed the speaker of the nature of the case, and before leaving advised the application of the forceps in due time. In less than three-quarters of an hour the child was delivered normally. The second case also terminated spontaneously. He was therefore of the opinion that interference is too frequently resorted to.

DR. PALMER, in reply to a question of Dr. Wright as to what occipito-posterior positions are, said that there were discrepancies of opinions in this matter. Some would include all cases in which

the occiput is posterior to a transverse line drawn through centre of pelvic brim; others, only such as where the occiput impinges upon the posterior inclined pelvic plane of the pelvis. If the latter division is adopted, the number of occipito-posterior cases is not very large, for the reason that the occiput may point posteriorly somewhat and yet not strike the posterior inclined pelvic plane.

DR. WM. H. TAYLOR remarked that Naegele claimed that the right occipito-posterior position was next most frequent to the left occipito-anterior, but the former generally rotates the occiput forward. As diagnosis of position is often difficult, he concurred with Dr. Trush that in cases of doubt we should introduce the half-hand or the whole hand, an anesthetic having been administered previously.

A point of diagnosis not usually mentioned is, that in the unmoulded head the posterior extremity of the ovoid is the larger.

As regards treatment, this discussion should be limited to delayed occipito-posterior cases, because many cases rectify themselves: it is, therefore, not wise to interfere too early. Rotation can be made safely only before the head has entered the brim; at this time the os is not well dilated, hence it is better to let it alone. As the cause of failure to rotate is imperfect flexion, we may early endeavor to complete it, by counter-pressure against the anterior part of the head or by traction on the posterior part. When the head has descended in the pelvis, authors differ as to treatment. Lusk says the forceps should not be used until we are forced to interfere, and then delivery should be by occipito-posterior mechanism; on the other hand, Parvin advocates rotation forward by the forceps. The speaker is opposed to this effort. If the forceps are used, only moderate traction should be made with all precaution and, as Barnes has said, "you supply the force and let nature make the turns."

DR. WHITE was surprised at the large number of occipito-posterior presentations, especially so at the percentage in primiparæ.

Tarnier et Chantreuil tried to throw some light on the subject by experimentation on the cadaver; the abdomen of a woman dead in childbirth was opened, and the occiput of the child's head placed in the hollow of the sacrum, delivery was effected by pressure applied externally, and great was their surprise to find that the head had rotated anteriorly thrice in succession. The same rotation occurred, but on the fourth trial there was an occipito-posterior presentation; a larger child was then introduced, when anterior rotation was again produced. They, therefore, concluded, the child's head being well flexed, the occiput would rotate to the front, as long as a proper proportion existed between the child's head and the canal: and the soft parts retained their elasticity. If the chin becomes elevated from the breast, then posterior rotation is apt to occur.

The speaker was not in favor of using the forceps when the head was high up in the pelvis, and thought that by so doing, with the intent of making forcible extraction, anterior rotation might possibly be prevented. In answer to the percentage of occipito-posterior presentations, it might afford some information by stating that in Prof. Freund's clinic, Strassburg, it was scarcely two per cent. Dr. Uvedale West, in some two thousand cases, found that only four per cent of the occipito-sacro-iliac positions rotated posteriorly.

Dr. White said that in Freund's clinic it was customary to regard as occipito-posterior positions (Hinterhauptslage) only those cases in which there was posterior rotation, the occiput sweeping down over the perineum in delivery; other cases, in which the rotation was anteriorly, were classified as normal cases of the first or second positions, respectively, as the back was turned to the left or the right.

DR. GEO. E. JONES said that he had seen but three cases of true occipito-posterior position, and each one of these terminated unaided and without trouble. None occurred in his own practice, however, but were seen in consultation with other physicians.

DR. JULIA CARPENTER said the reference by one speaker to the necessity, at times, of introducing part of the hand to settle a necessary point brought to mind a case she saw with several male physicians.

Owing to the narrow condition of the parts, they could not pass the hand far enough without detriment to the patient. She having by nature, of course, a smaller hand, hers passed up easily, and the diagnosis was soon made.

It was not a question of skill in diagnosis, but simply an instance where woman had by nature the advantage, and was a helpmeet to man.

DR. TRUSH, in reply to a question, "What constitutes occipito-posterior positions?" remarked that the discrepancy in understanding this question renders an answer a matter of importance. If we accept only such cases in which the occiput is persistently posterior, the percentage of these cases will certainly be very small; but the speaker understood by this term all instances in which the occiput stands in relation to the posterior half of the pelvic circle. Under this definition occipito-posterior positions are not rare.

The speaker was very much surprised at the Strassburg definition—according to Dr. White—of occipito-posterior cases, viz., that the position was named as the head emerged from the vulva! He regarded it extraordinary to name the position at the finish. In that event, we would have upwards of ninety per cent occipitopubic cases.

DR. PALMER said that practically we should include all cases as posterior in which the occiput is posterior to the transverse pelvic line. Anterior rotation will occur always, it matters not where the occiput is, provided the fetal head impinges upon the anterior pelvic plane; the rotation will be posterior, if the fetal head strikes the posterior inclined plane. There are no exceptions to the latter part of this rule with normal size of pelvis, head, and condition of soft parts. Exceptions may arise with very capacious pelvis, small heads, greatly relaxed perineum, from old lacerations, etc. A round, convex ball striking the anterior inclined pelvic plane will be moved *downward, forward, and outward*: the posterior plane, the direction of the same body will be *downward, backward, and inward*.

DR. MILES, in concluding the discussion, said that his cases were so few in number, that they could not be regarded as a contribution to general statistics. In regard to the frequency of occipito-posterior position, Leishman, after comparing several thousand cases of delivery, says about twenty per cent in vertex presentations are right occipito-posterior and three per cent left

occipito-posterior, the occipito-sacral position occurring very rarely. Delay in delivery is very frequently due to occipito-posterior positions, and this cause was operative in many cases attended by the speaker before the present statistics were collected, which induced him to make the observations reported this evening.

There was one point which the discussion did not bring out, namely, the height to which the forceps is to be carried up. If it is intended first to make flexion with the forceps, the blades ought not to be carried up too high, but sufficient to grasp the occiput and bring it downward and forward; and after flexion has once been accomplished, then the blades ought to be reapplied higher up for the purpose of extraction.

TWO CASES OF REMOVAL OF THE FALLOPIAN TUBES AND OVARIES.

DR. PALMER exhibited the uterine appendages from operations upon two cases of recent date. In one, the ovaries and tubes were congested and enlarged, they having been removed to stop menstruation in a case of fibroid tumor, reaching nearly to the umbilicus. Menstruation had stopped, and the tumor was shrinking.

In the other case, operated only five days since, the ovaries were enlarged, cystic, and both tubes enlarged, tortuous, the right having some fluid, being occluded. The operation in this case was done for constant pelvic pain, dysmenorrhea, retroversion and numerous attacks of hystero-epilepsy. The case is convalescing, and there is an excellent prospect of relief to the pelvic and nervous symptoms.

DROPSY OF THE VILLI OF THE CHORION.

DR. GUSTAV ZINKE exhibited a large hydatiform mole which was discharged by a patient (0-para) aged 24, a well and healthy blonde, married nine months. She ceased to menstruate Sept., 1886. No untoward symptom until about the middle of January, 1887, when he was called for the first time. He found her bleeding profusely from the uterus, complaining of pain in the hypogastric region, and nausea. Temp. N., pulse 90, full and strong. Physical examination revealed movable tumor immediately above symphysis pubis and to the left of the median line. Bimanual examination proved it to be the pregnant womb. Cervix was of normal density and the ext. os firmly closed. Rest in bed was advised and potassium bromide given internally. Hemorrhage grew less; her general condition improved, and in a few days she was able to be upon her feet, though she continued to lose blood during the eight days following. Complaining of chilliness and a feeling of malaise, quinia was given at intervals in 5 gr. doses. Upon this the flow stopped entirely for a few days. February 2d, another severe hemorrhage occurred. The same physical conditions existed as before, and the same treatment was instituted. Everything passed off similarly to the first attack, with the exception that she continued to bleed very lightly. No fever. She was kept under observation till Feb. 20th, the loss of blood amounting to a few drops only each day.

March 5th, another very severe hemorrhage took place, and again it was controlled by the same means. Physical examination, however, revealed that the uterus was not as large as before, which at the time he did not seriously consider as a diagnostic sign. General condition good. On the 7th, the loss of blood was alarming. Regular labor pains set in. To overcome a rigid os, copious hot-water vaginal injections were made every four hours and chloral hydrate and morphia sulph. given internally. On the 8th, the large hydatiform mole, presented, was discharged. Not a trace of a fetus was found. Patient doing well at this time, March 10th.¹

In a twelve years' practice and an observation of over 200 cases of abortion and miscarriages, this is the only instance of a case of this kind in his experience.

These cases are of interest because they are rare, and for the reason that a positive diagnosis is difficult and seldom made prior to the discharge of the mole. Special interest attaches to this case because of her youth and nulliparity. They have been most frequently observed in multipara and at a more advanced period of life.

Hydatiform mole was first correctly described and its true origin determined by Velpeau, later by Virchow; both maintaining that it is a dropsical disease of the villi of the chorion. They are, therefore, not true hydatids and were called so only because of their resemblance to this kind of cysts. Robin demonstrated conclusively, through the aid of the microscope, that the vesicles of a hydatiform mole have all the characteristics of the walls of the villi of the chorion.

The size of these vesicles in this specimen varies from that of a large grape to that of a small pin-head, though it is stated that they may attain the size of a "walnut." Their number is great; indeed, it would be difficult to count them in this instance. They are attached to each other by very small hollow pedicles measuring from 0.39 to 0.79 inches in length; if their diameter amounts to 0.39 inches, it is claimed that the fluid communicates between the vesicles. The fluid is colorless, thin like water, and contains albumin. The whole mass weighs about one and a half pounds and originally filled a pint pitcher completely.

The influence of this disease upon the fetus is always fatal if it occurs early; as observed here, not a trace of the embryo was found. If the affection begins later, say at or after the fourth month, the child may develop fully, but delivery is sure to be premature.

The general health is usually not much disturbed. Alarming symptoms from the loss of blood or decomposition of the mole within the womb may be brought on, and even death may result if the mole is of large size and of rapid growth, as in the case reported by Pajot, cited in late work of Cazeaux and Tarnier.

¹ N. B. Dr. Zinke's case has entirely recovered.

Prognosis thus seems to depend upon the period of gestation, the rapidity of the growth, the loss of blood, and the degeneration of the mole. In this case the disease must have commenced early, its growth was not very rapid, there was no degeneration of the mole, and the hemorrhage, though considerable at times, was more or less controlled by rest and did not create any marked depression of the system; therefore his patient did well, only suffering severe pains and being prostrated and confined to bed like a woman who passed through a natural labor. He also suggested that the fact of a decrease in the size of the uterus after a hemorrhage may serve as an important diagnostic sign. Should vesicles be discharged, which happens occasionally during a hemorrhage, the diagnosis becomes comparatively easy. It is then of importance that the blood lost should be carefully examined. Spiegelberg, in speaking of the tendency to a recurrence of this disease in future pregnancies, cites a case from the *Wuertemb. Corbl.*, No. 37, 1847, in which a hydatiform mole was formed eleven times with a well-developed fetus; and another from the *Clinique Obst.*, 1, 1872, reported by Depaul, in which it was observed to recur three times successively.

ABSTRACTS.

1. Fritsch: The Use of Iodoform Gauze in Gynecology (*Volkmann's Sammlung*, No. 288).--In this paper, the value of iodoform gauze in routine and in surgical practice is amply proved. At the outset, tampons should, in F.'s opinion, be made of this gauze for the main reason that they may be left *in situ* much longer than when they consist of other material, even 5% carbolized cotton. In particular is this gauze useful in the routine palliative treatment of carcinoma. The aim of the gynecologist is to approximate as far as possible in this affection a dry treatment, so to speak, and one which will overcome the odor. Such will be the result from the use of iodoform gauze. Fritsch uses it in long strips, one end of which projects from the vagina for the purpose of removal, and he is in the habit of combining with the iodoform equal parts of tannin, not only for astringent effect, but also for the purpose of disguising the odor (and this tannin most effectually does.) A properly applied iodoform-tannin tampon may remain in place for from four to five days. Equally of value is a similar packing with the gauze after the palliative surgical treatment of carcinoma. The cavity resulting from the curetting or the separation of the slough after the use of a caustic should be completely filled with the tannin-iodoform powder, and for this purpose F. has had a glass funnel constructed which admirably assists the insertion of the powder. Next to the powder the gauze is to be applied, and similarly it may be left in place for about five days. Treated after this fashion, the carcinomatous odor may be absolutely controlled. F. has also used pow-

ders of bismuth, bismuth and tannin, salicylic acid, alum and sugar, etc especially, however, in instances where necrosis was not marked, and therefore odor absent. (What promises to be a good combination is iodoform and antipyrin, owing to the slight caustic and decided hemostatic properties of the latter.)

Further, F. has frequently tamponed the cavity of the uterus, after removal of remnants of secundines, etc., with iodoform gauze, and he questions if, during the puerperium complicated by septic endometritis, it would not be more rational to curette the cavity and tampon with iodoform gauze than to irrigate. As late as the twenty-fourth day after delivery, he has removed a stinking remnant of placenta, curetted the uterus, and tamponed with the gauze. The result was excellent, but no better than he has often seen in cases where intrauterine injections were used. [In a case of septic endometritis which we saw a few months ago, and where intrauterine injections had only a very transient effect on the temperature and the fetor of the discharge, we curetted the endometrium on the fourteenth day, obtaining only a few vegetations, made a thorough application of the compound tincture of iodine, with the result of at once checking the fetor and controlling the temperature rise within twelve hours. We are inclined to think that in sepsis emanating from the endometrium, some such treatment as the above should be substituted for injections.]

Other conditions under which F. has used iodoform gauze are: after removal of sessile uterine polyps, in two cases of extirpation of the inverted irreducible uterus, in case of non-puerperal endometritis (by packing the cavity of uterus with the gauze). F. states that every uterus will not submit to this tamponing; in certain cases pain and hemorrhage result. The method, however, is simple, and when borne by the patient is excellent. Even in the nulliparous uterus, a strip of gauze seven and a half inches long may be packed with ease and without pain. Further still, F. uses the gauze after discission of the cervix, or after the crucial incision to keep the edges from uniting; also after cauterization of the endo-cervix. Interesting cases of operation on the uterus, the vagina, and the abdominal cavity are recorded where the gauze was used freely with good results. We select two or three: *Case of purulent ovarian cyst, intraligamentous*. Entire removal of sac impossible. Packed with iodoform gauze, the end projecting through abdominal incision, gauze removed on seventh day; two re-packings in next seven days. Patient discharged cured in three weeks after operation. Temperature practically normal throughout. In two other somewhat similar cases, dry iodoform gauze was packed in the abdominal cavity, in each with good result, and uncomplicated convalescence. Similarly in case of extra-uterine pregnancy, after having lost two cases from endeavors at entire removal of the sac, F. has had good results from leaving the sac and packing with iodoform gauze. These cases are very striking and are reported in full. In one, the patient had carried the fetus for seventeen years in the abdomen, when suddenly the sac suppurated. Abdominal section was at once resorted to; the sac was completely covered with omentum. Its edges were sewed to the abdominal incision, a putrid child removed, the placenta had disappeared, the walls of the cyst were incrustated with lime. The sac was filled with iodoform gauze, which was

changed daily, because it was not possible to completely cleanse the sac. At the end of a week all odor was lacking, iodoform-glycerin was substituted for the dry gauze; on the eighteenth day the woman left her bed and was discharged cured, no fever, no peritonitis whatsoever. In a similar way F. has treated a thick-walled parovarian cyst with success. After kolpo-hysterectomy, F. sews the peritoneum to the vagina, and fills the latter with iodoform gauze.

After ample experience in the above and other instances, F. assures us positively that he has never seen a case of poisoning. E. H. G.

2. Wyder: The Uterine Mucosa in Case of Myomata (*Arch. f. Gyn.*, XXIX., 1).—From a detailed study of twenty specimens of subserous, interstitial, and submucous tumors, the following conclusions are reached: 1. The thicker the muscular capsule of a uterine fibromyoma the less likely is the tumor to affect the circulation in the mucous membrane. The uterine glands are markedly swollen, the interglandular tissue being only slightly, if at all, affected. The nearer the tumor is to the mucous membrane, on the other hand, the greater the swelling of the interstitial tissue of the interglandular substance. The glands themselves may not be affected at all, or they may be caused to disappear. 2. In the majority of the specimens, the line between the mucosa and the muscularis was sharply marked. 3. In five of the specimens, menorrhagia had not been a symptom, and yet the mucosa was thickened to the extent of ten millimetres, sometimes with great swelling of the glands, to the extent even, in one case, of the production of polypi. In two cases, there existed endometritis glandularis without any changes in the interglandular tissue. In two further cases, there existed, side by side with marked glandular endometritis, an acute interglandular endometritis in the deeper parts, accompanied by an increase in the round cells of the interglandular cellular tissue. In one case, glandular endometritis was found in one wall, partially so in the other, and near this a partial chronic interstitial endometritis which had progressed to the extent of local cystic degeneration. 4. In case of the prolonged presence of multiple fibroids in the uterine walls, adenoma of the mucosa accompanies them, and leads to hemorrhage only when, as a result of the decreased nourishment of the mucosa, ulceration results. 5. Endometritis, so long as it is limited to the glands, and the interglandular tissue is not affected, is not accompanied by hemorrhages. When both the glands and the interglandular tissue are affected, and there exists, therefore, both glandular and interstitial endometritis, then metrorrhagia appears. 6. The association of carcinoma and myomata is excessively rare. 7. Pure glandular endometritis is not met with very frequently. 8. The aim of treatment should be to check the hemorrhage by modifying the endometritis. This may be accomplished by curetting. Where this is not possible or not sufficient, there remains myomotomy.

(The most interesting histological points are elucidated on well-executed plates.) E. H. G.

3. Prochownick: A Contribution to the Subject of Castration (*Arch. f. Gyn.*, XXIX., 2).—In this paper are recorded the histories of twelve castrations for fibromata, and of ten for the cure of neuroses,

with no deaths in either series. We will examine each class separately in regard to such points as may seem of interest. In case of the fibromata, in 6 the menopause was established, in 5 the patients continued to have irregular hemorrhages, in 1 the hemorrhages still continued, and the largely submucous fibroid was finally enucleated *per vaginam*. In 5 the tumor disappeared, in 6 it was more or less rapidly retrogressing, in 1 it was about stationary. In 11 of the cases the report from the patients was that they were in good physical and psychical condition, five to one years after operation. One woman died five months after operation from cerebral embolism. In all the cases but one, the chief indication for operation was metrorrhagia, in the exceptional case pressure symptoms threatening life.

Of the castrations for neuroses, the women were from 25 to 38 years old, and all had had sexual relations but two. In all, various methods of treatment had been tried without avail. In most of the cases, oöphoritis or peritonitis were the local findings. Amongst the neuroses complained of we note with the result: 1. Spinal irritation, paralysis of left lower extremity, paresis and anesthesia, mental depression. Result at first good, and then, on occurrence of abdominal hernia, symptoms returned. Both ovaries greatly enlarged; 2. Cramps, gastralgia, dyspepsia, great pain in defecation, deep depression, and melancholia. Result good for seven months, then return of all the symptoms. Laparotomy again performed to remove supposed remnants of ovarian tissue. Result again good for nine months and then relapse. Ovaries cystic; 3. Menstrual pains, hysterical symptoms. Result good for nine months. Then recurrence of same symptoms. Right ovary colloid and removed. Left ovary healthy and not extirpated. Tubes healthy although small; 4 and 5, symptoms relieved. In 4 ovaries greatly enlarged, fibrous; 6. Entirely cured of bladder neuroses, hysterical spinal irritation, and symptoms of tubes. Both ovaries enlarged; the remaining four cases cured of their neurotic affections, which varied from hysterical cramps to hypnotic symptoms and deep melancholia. (P. has set a good example by reporting his cases with the results after a sufficient time had elapsed for definite statement. Other operators should do likewise, and then we will be in a position to judge as to whether, particularly in neuroses, it is worth while to counsel the patients to risk their lives or not. At the present time it is questionable if the hope which may be held out warrants the risk.)

E. H. G.

ITEMS.

Dr. Geo. B. Fowler, formerly in charge of the Department of Diseases of Children in this JOURNAL, has been appointed visiting physician to Bellevue Hospital, to succeed the late Dr. E. Darwin Hudson.

Dr. A. Caillé and Dr. Wm. Balser have been appointed visiting physicians to the German Hospital.

A contribution of \$15.00 for the Schroeder fund was received from Dr. Geo. T. Harrison, too late for notice under the proper head.

THE AMERICAN JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] AUGUST, 1887. [No. 8.

ORIGINAL COMMUNICATIONS.

A CONTRIBUTION TO THE STUDY OF ULCERATIVE LESIONS
OF THE VULVA, COMMONLY CALLED LUPUS OR
ESTHIOMENE.

With Plates.

BY

GRACE PECKHAM, M.D.,

Attending Physician in the Gynecological Service of the Dispensary of the N. Y. Infirmary,
Associate Attending Physician to the N. Y. Infirmary for Women and Children,
Instructor in Gynecology in the Woman's Medical College of the
N. Y. Infirmary.

PROBABLY it is due to the fact that deep ulcerative lesions of the vulva are so extremely uncommon that one finds the most widely varied opinions on the subject. The nomenclature, the causes, the symptoms, the diagnosis, the microscopic appearances, the treatment and its results, one and all have been made the theme of controversial discussion, since Huguier, in 1848, brought together nine cases of vulvar disease and unified them under the name of "esthiomène of the vulvo-anal region." Deschamps' remarks that esthiomène is a name

¹ "Étude sur quelques ulcerations rare et non-vénériennes de la vulve et du vagin." Arch. de Tocol., 1885, p. 19.

under which has been confounded until now a certain number of affections clinically analogous, but absolutely different from an anatomical point of view. The term is defective and should disappear from science. The diseases considered under this head are either epithelioma, tuberculosis, lupus, or advanced syphilis, and can be diagnosticated according to the results of treatment, and by the microscope.



FIG. 1 (Case X).—Erythematous, perforating and hypertrophic esthiomène of the vulva and anal region. Hugnier.

Of lupus, M. Bazin says¹: "The word lupus has been for different authors, since its introduction in the pathology of the skin, a subject of perpetual variations. The lupus of Willan and Bateman is not that of Bielt and M. Cazenave, who do not understand it in the same fashion as Rayer, Gibert, and M.

¹ "Diet. Encyc. des Sc. Méd." Paris, 1870.

Devergie, and the school of Alibert does not offer fewer divergencies. Each dermatologist who appears on the scene interprets lupus after his manner, adapts it to his views, or retrenches its signification."

Much in regard to the name might be written. Genital lupus, vulvar lupus, lupus exedens, lupus vulgaris, herpes exedens, herpes esthiomènes, esthiomèna, noli me tangere, dartre



FIG. 2 (Case X.).—Same as Fig. 1. Shows the effect of treatment (Huguier).

rougeante, esthiomène serpigineux are the many titles which have been given to the lesions of the vulva under consideration.

In France, esthiomène is the term used instead of lupus to designate that disease when occurring on the external genitals. Huguier¹ describes four varieties—the erythematous, tuberculous, ulcerative, and ulcerative with hypertrophy. Guibout²

¹ "Mém. de l'Académie."

² "Des diverses affections non-spécifiques des organes genito-urinaires chez les femmes," etc., par M. Eugène Guibout. Union Méd., 1847, Nos. 46-51, p. 204.

and Fiquet¹ divide the forms into superficial, deep or perforating, and hypertrophic.

Call the affection by what name one will, there are a certain number of cases on record of ulcerative lesion of the vulva, characterized by its slow progress, the lack of pain and impairment of the general health; in which the parts present a violet color and are thickened, indurated, and hypertrophied, and to a greater or less degree destroyed.

Such an one is the case which I have to report. Sixty or

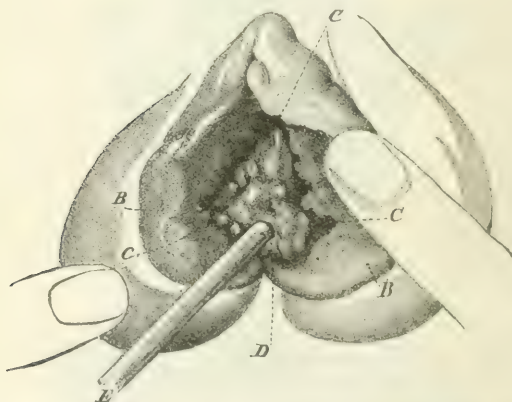


FIG. 3 (Case X.).—Shows the destruction of the vestibule and at the base of the nymphæ, and the small tumors about the urethra (Huguier).

more cases are recorded or classified in literature as *esthiomène* or *lupus* of the vulva; of these, thirty-two are distinctively ulcerative lesions; the others, either plainly are not, or are doubtful in regard to their nature. These cases then are so rare and far between that the history of even a single one becomes of value.

The patient, C. F., is a large, well-built market woman, weighing 178 pounds, 48 years old. Mother healthy. Father died of

¹ "Essai sur l'Esthiomène," par Albert Fiquet, 1867.

consumption at 39. She had nine brothers and sisters, all of whom were healthy.

Patient menstruated at 16. Menopause since two years; ceased without trouble. Married at 17. Had six children and one miscarriage. After living with her husband twelve years, he disappeared, and eleven years after, in 1879, she married a Nor-

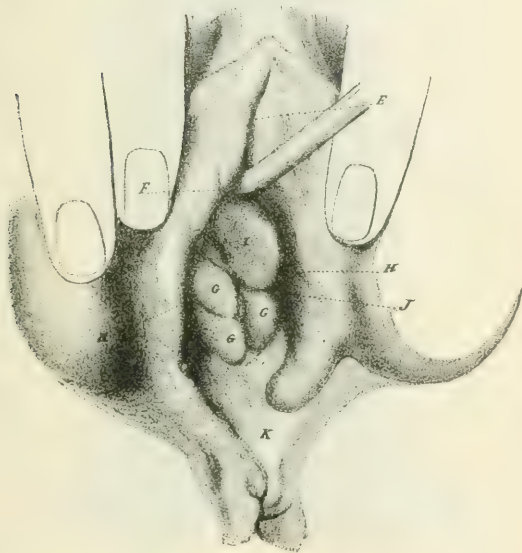


FIG. 4 (Case XI).—Perforating and hypertrophic esthiomene of the vulva, perineum and anus (Huguier).

wegian sailor, who had had syphilis three years before, and had been treated for it in a Norwegian hospital, and recovered. She had swelling and suppuration of the right inguinal glands in 1875. In 1879, her seventh and last child was born. Before this, she had some leucorrhea. After the child was born, she no-

ticed a scratch on the inner surface of the left labium majus, and that the discharge increased. It gave her no discomfort, except on micturition. From this scratch the trouble went on slowly increasing, until it reached its present state.

The patient was first seen at the clinic of the Woman's Medical



FIG. 5 (Case XII).—Perforating esthiomène of the anus and vulva (Huguier).

College of the New York Infirmary more than two years ago, at which time the appearance of her disease was much the same as it is now.

Her general health is excellent. She complains of very little pain, except once in a while a "sticking pain" in the left side. She can walk without trouble. She goes about all day peddling

from enormous market baskets which she carries on either arm. She complains of the itching which sometimes, especially after micturition, is very troublesome. She has no bladder or rectal difficulty. The labia majora are hypertrophied and separated



FIG. 6 (Case XIII.).—Hypertrophic vegetating esthiomène of vulva (Huguier r).

from the labia minora by deep ulcerating furrows. The line of ulceration as it meets the mucous membrane is irregular, somewhat dentated. There is no eating away of the tissue, so that

the surface of the ulceration is not deeper than the adjacent mucous membrane. It is irregular, with here and there prominences the size of millet-seeds and larger. It has, with this exception, the appearance of an ordinary granulating surface, cover-



FIG. 7 (Case XIV.).—Hypertrophic ulceration of vulva (Huguier).

ed with laudable pus, to which there is no odor. The clitoris and labia minora are transformed into a bunch of three or four tumors which hang suspended from the pubis between the labia majora. The right nymphæ is almost entirely destroyed. These tumors



ULCERATION AND HYPERTROPHY OF THE VULVA.



have a shining, smooth surface, and are of a violaceous color, which is also characteristic of the vulvar mucous membrane elsewhere. The vestibule presents a fossa filled in with irregular cicatricial nodules; in the midst of these is the urethral opening. The vaginal opening is also surrounded by four larger irregular tumors, at the base of which are ulcerating furrows, commencing to dissect the vagina from its attachment. Posteriorly, this has progressed to the depth of two centimetres.

The entrance to the vagina is narrowed and surrounded by a cicatricial band. The disease does not extend up the vagina.

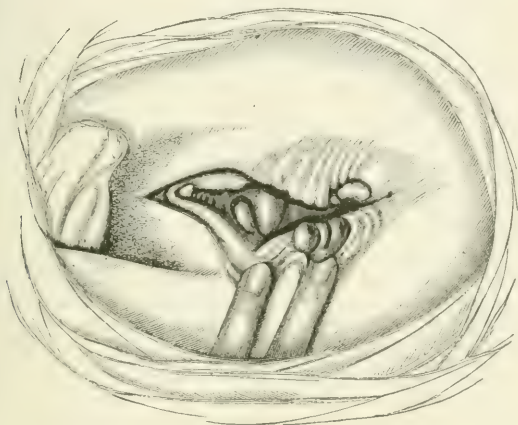


FIG. 8. (Case XXIII.).—Ulcerative destruction of vulva and perineum (McClintock).

The uterus is normal. Irregular tags, two or three centimetres in length, extend back on the perineum; one of these, which was ulcerating off and only held by a thread of tissue, was taken for the microscopical examination. The perineum shows the effect of an old laceration. A small external hemorrhoid is seen at its junction with the anus.

The inguinal glands of both sides are enlarged, more upon the right than on the left. On the former is the scar of the old supuration which she said took place in 1875.

Microscopic Examination.—I am indebted to Dr. H. C. Coe, Pathologist to the Woman's Hospital, for the following report of the examination of the specimen sent to him:

"The specimen was hardened in absolute alcohol, and numerous sections were made and variously stained. They presented an almost uniform appearance under the microscope. The following is a brief description of a section made from the proximal end of the mass, which may be regarded as most typical: The section includes the epidermis and corium. The former appears to be perfectly normal, the epithelial layer being intact. At no point in this layer is there the slightest suggestion of proliferation, round-cell infiltration, or loss of substance. The pathological changes are confined to the corium, and consist briefly of general round-cell infiltration, the cells being similar to those seen in ordinary granulation tissue. They are arranged mainly in groups, which occupy the interstices of the connective tissue, and are frequently seen surrounding dilated blood-vessels. In some spots they are distributed in the form of lines or strings (along the lymphatics?). There is general dilatation of the lymphatics (or veins?). In sections immediately in the neighborhood of the proximal end of the mass, the cell-infiltration is much more marked and there are a few doubtful giant-cells; in sections from the distal end, the cell-groups are more sharply isolated and are confined more to the immediate neighborhood of the vessels. Cells of an epithelioid type are absent. There are no evidences of ulcerative change or of cicatrization. The microscopical appearances correspond quite closely with the descriptions of lupus given by some writers: others lay stress upon the diagnostic importance of the presence of giant-cells and epithelioid cells, which are absent in the present specimen. Carcinoma and epithelioma can be positively excluded, as well as sarcoma. The entire absence of fatty degeneration, caseation, and breaking down of the nodules would seem to exclude tubercle and syphiloma, although not positively. In short, the microscopical appearances are those of simple inflammation of connective tissue, with this peculiarity, that the round-cells show a decided tendency to form circumscribed groups or nodules.

"It is evident that no positive diagnosis can be made by the microscope alone."

What then is the diagnosis in such a case as this? Is there esthiomène or lupus of the vulva; and if so, how are we to know that the case before us is such an one? If you refer to the sixty or more cases recorded in literature under the names of lupus or esthiomène, hypertrophic and ulcerative lesions, you will find a varied and curious collection. Is it possible out of

such a snarl to bring about a proper classification of such affections!

All writers recognize that lupus, though occurring more frequently upon the face than elsewhere, may and does in rare instances attack the vulva. A careful reading of the reported cases would indicate this; but Huguier's able monograph has been misleading, and the feeling has prevailed expressed by Matthews Duncan, who says that "the name lupus is retained in order to avoid change, and because the character of the disease brings it into alliance with the ordinary run of such cases." Lupus itself is debatable ground. It would take much space to go into the intricacies of its discussion. Certainly, lupus and these ulcerative lesions of the vulva have in common a relation with the three congeners—scrofula, tuberculosis, syphilis—the three great blood taints, which again lead one into many unsolved mysteries of human disease. French writers (notably Fiquet) are strenuous in their opinion that what they call *esthiomène* is a scrofulide. They search in a truly prejudiced manner to demonstrate this. Some of the cases on record are undoubtedly tubercular. A few are carcinoma. I have set aside those which, in my belief, are such, and also those cases in which no ulceration was recorded. I find, as has already been stated, that, including my own, there remains a total of thirty-three cases. Of these, I have made a table which displays the age at which the disease occurs, the state of health, the duration, and the result, and I have analyzed the cases in order to show the relation of syphilis, as well as the involvement of the inguinal glands. Of the thirty-three, twelve either gave a direct history or left but little doubt of having had syphilis. Of the others, fourteen might possibly have had it, which analysis gives strong presumptive evidence that syphilis plays the most important rôle, and that in most of these cases we have to deal with a phagedenic syphilide rather than lupus. Hardy¹ refused to see in Huguier's cases anything other than syphilitic phagedenic ulcers. De Chambre classifies lupus under two varieties, scrofulous and syphilitic, and regards tertiary syphilis, scrofula, and embryonic tuberculosis as equal or interchangeable conditions. It might then be legitimate to apply the word lupus in the general and wholesale manner in which it has been used. Nevertheless, since it has been em-

¹ "Dict. Encyclop. Sc. Med." Art. "Lupus."

1. Desrullés (I.).	32	Good	No hist. (probable).	Involved	2 years	Cured.
2. Guibout (IV.).	21	Good	No history.	Not mentioned	6 months	Not improved.
3. Guibout (V.).	26	Good	No history.	Involved	4 years	Not improved.
4. Guibout (VI.).	32	Good	Yes	Not mentioned	6½ years	Not improved.
5. Huguier (VIII.).	21	Not mentioned	No hist. (probable).	Not mentioned	6 months	Improved.
6. Huguier (IX.).	32	Not mentioned	No hist. (probable).	Not mentioned	Several years	Improved.
7. Huguier (X.).	52	Good	No hist. (probable).	Not mentioned	7 years	Improved.
8. Huguier (XI.).	32	Not mentioned	Yes	Slightly right side.	3½ years	Cured.
9. Huguier (XIV.).	24	Good	Yes	Engorged	3 years	Death.
10. West (XV.).	30	Good	No hist. (probable).	Not mentioned	2 years	Cured.
11. Munier (XVIII.).	29	Poor.	Not men. (probable).	Not involved	15 months	Death.
12. Martin (XXI.).	53	Good	No hist. (probable).	Engorged	5 years	Cured.
13. McClintock (XXIII.).	30	Poor.	Yes	Not involved	2 years +	Not mentioned.
14. Duncan (XXVI.).	28	Good	No hist. (probable).	Not mentioned	2 years	Not improved.
15. Curtis (XXIX.).	30	Good	No hist. (probable).	Not mentioned	1 year	Not improved.
16. Leroy Les Barres (XXX.).	27	?	No hist. (probable).	Not involved	3 years	Death.
17. Bernutz (XXXII.).	34	Good	Probable.	Not involved	17 months	Improved.
18. I. E. Taylor (XXIV.).	30	Good	Not mentioned	Not mentioned	1 year	Cured.
19. Fiquet (XXXIII.).	23	Good	Probable.	Enlarged; has sup- purated.	2 years	Cured.
20. Fiquet (XXXIV.).	38	Good	Probable.	Not mentioned	1 year	Improved.
21. Fiquet (XXXV.).	22	Not mentioned.	Yes	Not mentioned	1 year	Cured.
22. Lefort (XXXVI.).	35	Poor.	No hist. (probable).	Not involved	18 months	Cured.
23. Fiquet (XXXVII.).	21	Good	Yes	Involved both sides.	28 months	Cured.
24. Fiquet (XXXVIII.).	20	Good	Yes	Involved	?	Cured.
25. Siredey (XXXIX.).	29	Not mentioned	No hist. (probable).	Not involved	1 year	Not improved.
26. Lancereux (XL.).	48	Not mentioned	No hist. (probable).	Not mentioned	1 year +	Not improved.
27. Nacy (XLI.).	23	Good	No hist. (probable)	Not mentioned	5 months	Cured.
28. Winckel (XLIII.).	28	Good	Probable.	Not mentioned	3 to 4 years	Improved.
29. Cayla (XLIV.).	42	Poor.	Not mentioned	Not involved	11 years	Death.
30. McDonald (XLV.).	40	Poor.	Not mentioned	Not involved	6 to 8 years	Death.
31. McDonald (XLVII.).	46	Good	No history.	Not involved	Not long	Not improved.
32. C. B. Kelsey (XLVIII.).	55	Good	No history	Not involved	2 years	Not improved.
33. G. Peckham	48	Good	Probable	Involved both sides.	8 years	Not improved.
20-55	21 good 5 poor 7 not mentioned.	7 had 17 no history* 5 probable 4 not mentioned	9 involved 10 not involved 14 not mentioned (prob- ably not involved).	5 mos. to 11 years	1 not mentioned. 6 deaths. 10 not improved. 7 improved. 6 cured.	

ployed so loosely and with so wide a signification, since it is applied to superficial, profound, and perforating varieties alike, it would seem less misleading to give those affections under consideration a descriptive name, such as hypertrophic vulvar ulcerations, prefixing the adjective, according to the diagnosis, as syphilitic, scrofulous, lupoid, or tuberculous.

Having proven by the microscope, as well as by the fact that the patient presents no cachexia, is strong and healthy, suffers no pain worthy of mention, has no offensive odor from the discharge of the ulceration, and by the notably slow course of her disease, that she has not carcinoma, how then would it be determined which of the above forms of ulceration we have to deal with?

Will the violaceous tint which is characteristic exclude syphilis? By some writers it is thought to do so. Even when it has been present in cases with a clear syphilitic history, the conclusion has been drawn that an independent disease had been engrafted. The color, I think, is due to the congestion of the parts. The same result is seen in the violet or purplish tint of pregnancy.

Is there, then, any diagnostic value in the character of the borders of the ulceration?—another point which has led to the diagnosis of lupus to the exclusion of syphilis. Unfortunately, in many of the cases analyzed, a description of the borders of the ulceration has been omitted, but in those given they are variously mentioned as rounded, sloping, sharply cut, irregularly cut, undermined and not undermined, and where the syphilitic history is plain, they are as likely as not to be uncharacteristic of the usual sharp-cut, punched-out appearance, which is recognized as belonging to ordinary syphilitic ulcers. It is an open question, therefore, whether the borders of the ulceration give a key to the diagnosis.

Is the involvement of the inguinal glands in any special way characteristic so as to influence the diagnosis? It is mentioned by some as an accompaniment of *esthiomène*. It is shown in the above table that they are more often not involved. The absence of chronic enlargement of these glands sheds no light, moreover, upon the syphilitic history.

What can be gathered from the microscope? It is to be regretted that microscopic examinations have not been more frequent. Nevertheless, there seems to have been a very nearly

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case I. Hypertro- phic Paraphimosis of the Glans. Gotch's Arch. 1844 F. T. IV., p. 31. Huzeler's case. 20 N. H. Obs. IX.)	July 11	Marie C., 32		Not married. General health good. Disease since two years. Complained of headache, two years before had a discharge, sometimes tinged with red. Two months after complained of itching, after which appeared red points size of pins. Two months after this the inguinal glands were swollen, en- larged, and suppurated; quickly healed. Six months since vegeta- tions of tumor appeared. No pain in walking, urination, or coitus.	Vulva entirely deformed. A volumi- nous tumor in median line and two small lateral tumors. These were labia majora. The first was the left nymphia, entirely unrecognizable. The right was double the normal size, somewhat red and soft, and pushed out of place by the principal tumor. The left was three times its normal size. There was no heat nor pain. In the midst and as if sus- pended from the clitoris, was a tumor of nine centimetres long, five cen- timetres broad, irregular in shape, hard, of a livid color, like a fibroid of the uterus, insensible to touch, but sensitive to a prick. It was covered with great veins, but no artery felt to pulsate. The top was covered with vegetations, thick, numerous, and of various sizes. Underneath the tumor were several irregular ulcers with elevated borders, with a grayish, spongy base. A long line of ulcer- ations occupied the genital and anal fold. The perineal raphe was hard, red, and raised one centimetre. Carunc- cles hardened and hypertrophied. Vaginal discharge clear; liquid not very abundant.	Sarsaparilla, prot. (food). Iod. of mercury. Surgical proced- ure for tumor with good results.	
Case II. Bad ... 1843	Feb. 9	Louise R., 27		Lymphatic. Health good. Married at 24. Family history good. Gave his tory of anti-syphilitic treatment at different hospitals. Osteoscopic pains. Inguinal glands of both sides enlarged and engorged. Husband never had syphilis.	Labia majora considerably swollen; left quadrupled in volume; pale in color and without pain on pressure. Nodules of induration. Left nymphia normal. At summit of clitoris was a tumor five centimetres long, three centimetres broad, bright red, elastic. The right nymphia hyper- trophied. The mons appeared as if formed of tubercles matted to- gether. There were covered crusts and some fungosities. Abundant vaginal discharge. Groups of pus- tular eruptions on the hips.	Lost sight of short. Negative, ly so could not note effect of treatment.	

Upon the internal and anterior part of Did not remain long enough in hospital for treatment. Negative.

Case III. Aubout, Jan. 20, 1847. Union Med., 1847, p. 28. Ist Obs. Esthionome erythematosa et tuberculeux de vulve.

Case IV. Aubout, 1847. Ibid. 24 Obs. Esthionome vulvaire perforant.	Holboe Mother, coloriste.	21 Health good. Lymphatic—sanguine temperament. Family history good. Never had any discharge or syphilis. Disease six months standing.	Labia minora hypertrophied, enlarged, and degenerated. Slightly indurated. Caruncles swollen and edematous. Anterior portion of vagina is detached by an ulceration of the posterior wall, making the vulva a species of valve. Three ulcerations about the meatus urinarius. Surface violet-red, smooth, and polished.	Excision of the bar- dened and de- tached posterior vaginal wall. Under treatment three months. Iod. of iron and potassium, endo- mel ointment to the vulva.	Healing.
Case V. 34 Obs. Ibid. Esthionome hypertonique et perforant de la vulve.	Adèle Boucher, domestic.	26 Health well preserved. Temperament lymphatic. Never had children, nor syphilis. Disease four years' standing. Commenced with a painful swelling which made great and continual progress. This was followed by swelling of inguinal gland.	Vulva livid. Left labium majus swollen, hardened, and thickened. On internal face a large ulcer, ending in a cul-de-sac, situated on left wall of vagina four or five centimetres deep. The vagina was hardened and retracted. Caruncles were thick- ened and hardened. Rectum also invaded. Defecation was painful. Large and small labia are hardened, thickened, edematous, violet color. A large ulceration surrounds the vulva and meatus and the entrance of vagina. It is superficial, smooth, red, and covered with a kind of epithelium. The whole vaginal orifice is dissected by the ulceration. Meatus destroyed. From fourchette to anus are hypertrophy and tubercles, on anterior part of buttocks and gluteal fold, as far as the right corner, depending labium majus, internal aspect of right thigh were a dozen slightly elevated patches of a deep red, somewhat violet, isolated, but	Iod., potas. calomel ointment.	Not improved.
Case VI. 4th Obs. Ibid.	Eleonore Ibid.	32 General health good. Very little disturbance. Nervo-sanguine temperament. Had chambers of the vulva. Six months after this trouble appeared, six and one half years ago. Under lovable treatment in the service of M. Bazin. Since six months trouble has increased.			
Case VII. Hugonier, Jan. 20, 1846. Mem. Acad. de Med., 1846. Sur l'Esthionome de la Région Vulvaire. (Obs. I. Essai.)	Tro. Mar. 32 Sanguine, lymphatic temperament. Strong constitution, moist, regular at 17. Never had venereal trouble nor discharge. These children dead except one, which was scrofulous. Seven years ago fell and injured vul-				gave reducing treatment at first without improve- ment. After fif- teen days gave iod. potas. Eight reappearance

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
thoroughly suppurated, the tumor and tubercles.				<p>no pubic region. Since then she has always suffered in those parts. Two months ago, saw a redness and swelling which came on right side of vulva and extended to surrounding parts. No pain in affected part. General feeling of malaise.</p>	<p>united, one to another by the erythematous lining. Seven or eight, of a dull red color, penetrated more deeply than others, their surface wrinkled, cracked, and covered with thin, dry crusts, some brownish, others grayish white; the skin on which were these tubercles, was thickened, wrinkled, indurated, shining, of a dull color. Swelling and thickening of right labium majus, mucous membrane of which, as well as right nymphæ and all the interior part of vulva, was thickened, indurated like skin, and had lost its normal color. There were excoriations and excoriations on anterior part of buttocks, and the thigh. Inguinal glands of right side involved.</p>	<p>days after which tubercles began to disappear. Rubbed iodine of lead ointment in to inguinal glands and labium majus. Gave sitz baths with decoction of walnut leaves.</p>	<p>of disease owing to unhealthy, suppurating and hard work.</p>
Case VIII. Hygienic, May 5, 1885, colorist.				<p>children. No venereal trouble eight months ago had discharge, which was cured by hospital treatment in two months. Short time after reappeared. Parts became swollen and sometimes painful. No softening. Never has communicated syphilis.</p>	<p>Nymphæ hypertrophied, swollen, and slightly indurated. Much larger than the labium majus. Caruncles swollen, edematous. They are a grayish rose color, and their tissue is slightly transparent. They are firm, elastic. Vulva pale. Posterior portion of vaginal wall detached by an ulceration which has also destroyed the fossa navicularis. Ulceration is violet red, smooth. Edges rounded and firm shining. Three ulcerations around the meatus urinarius. Purulent, serous discharge. Vaginal orifice retracted by tumefaction and ulceration of the parts which form them. Inoculation twice without result. Microscopical examination.</p>	<p>Sitz baths, hop and chamomile tea, iod. of potas. Counterized with nitrate of silver. Parts improved after 3 months, except the detached vaginal wall. Healed and patient left hospital. Probably been cured if remained longer.</p>	<p>Improved, July 25th left hospital.</p>
Case IX. Had, Oct. Aug. 11, 1886.		Dol. Pru., 33		<p>Suffered on diathesis. Menstrual irregular. Never had children. Never venereal disease. Never gave it. Redness of vulva since several years. Itching intense. Six weeks been under treatment.</p>	<p>Vulva pale, slightly violaceous. A tumor size of a nut, pale, semi-transparent, situated at the entrance of vagina. Looked edematous, but was firm and resisting to the touch. It</p>	<p>Sitz baths. Walnut leaves as injection. Amputation of salient parts.</p>	<p>Improved. Patient left hospital before cure was effected, Jan. 22.</p>

vaginal orifice
slight uterine ex-
turb.

on passing water.

which was detached from the vesti-
bule by a reddish violet, smooth ul-
ceration, borders of which were
rounded, thickened, etc. It destroy-
ed the vestibule, meatus, and urethra
in the lower third. Sero-purulent,
abundant discharge. Vaginal orifice
retracted and small.

Case X. Huguenot, July 1. Bla. Mar., 52 Married. Good constitution. Menstr at
day in
1845.
14. Always regularly until 16, when
disappeared. Four children, two
living. Menorrhagia, which changed
to constant leucorrhœa. No venereal
history. Seven years before, felt
itching of vulva and about anus.
Little by little parts swelled, and
became slightly painful.

Red, erythematous condition of exter-
nal surface of vulva, gonitoeurual
folds, and the parts adjacent to the
anus. Varying in intensity at differ-
ent points. Somewhat violet in color,
and gives a marbled look to the
parts. Skin thickened, hard, rugous,
and dry. No vesicular or pustular
eruption. Labia majora double their
usual size. Chronic infiltration.
Nymphæ, prepuce of clitoris thick-
ened, hardened, their borders un-
equal, granular, and mamelons
in their whole extent. They consist
of a number of small, sessile, shining
tumors, size of a very small pea.
Rough, irregular ulceration, borders
perpendicular, broken, irregular. It
destroyed the vestibule, cut the in-
ternal base of the nymphæ, destroy-
ed the caruncles, the nymphæ, hyme-
neal fold. Irregular small tumors,
size of peas, are about the urethra,
and conceal the meatus. Abundant
sero-purulent discharge. Perineal
fold hypertrophied. Folds about
anus are chronically inflamed, en-
larged, and surrounded by the same
kind of tumor as urethra. These
small tumors are firm, elastic, re-
sisting. They have a single base and
not separated, isolated one from
another as in vegetations and syphi-
litic condyloma. The anus is retract-
ed and drawn back, and at the base of
the tumor surrounding it is a deep
ulceration. Passing even the tip of
the finger into the anus gives pain,
but there is no fissure. The indura-
tion extends up three centimetres.

No.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case XI. Performing and hypertrophic es- thione of the vulva, perineum and anus. Obs. V.	July 22.	Ter. (1). 32 day in boiler.	32	Nervous. sanguine temperament. Menstr. regular. History would indi- cate venereal disease. Was treated for it, but not improved. Husband had a discharge, and gave her clun- dres. Had eruptions on different parts of the body. Three years and a half after, noticed the labia majora swell- ed and some ulceration about the va- gina. Complaints of itching, smart- ing, and sometimes of shooting pains.	Labia majora prominent, hypertro- phied, hard, edematous; red, slightly vitreous color. Left labium much larger than right. Nympha thick- ened, elongated, infiltrated. Instead of losing themselves in the labia ma- jora, they are prolonged to the peri- neal raphe and to some hypertro- phied folds of the anus. The vulva, from clitoris to anus, is pale violet colored. An extensive circular ulce- ration separates and cuts the vulva from the inferior portion of the va- gina. Meatus and vestibule are de- stroyed. The opening to the urethra must be sought with a sound. The surface of ulceration is a violet red. Borders irregularly cut, and lose themselves insensibly on the ulce- rated part. Red, shining, thin, cicat- rized tissue surround all these parts. Anterior column of vagina and caru- cles are thickened and infiltrated, which causes the narrowing of the vagina. Erythematous condition of all the parts which are in contact with the trouble. Inguinal glands are healthy, except slight enlarge- ment of the right side.	General and local tonics, cod liver oil. Cicatrices healed. 2 months after, cut off the portions which made a valve about the ure- thra. Passed a bougie, size of 2 fingers, every day to keep vaginal orifice open.	Healed March 1st, 1847.
Case XII. Obs. VI. rating eschio- mene of the an- and vulva.	Mar 12, 1846.	Hon. Luz. dress- maker.	38	Lymphatic. Delicate. Menstr. at 12; regular until 17, when ceased after a fall into the water. Tumor, size of a nut, developed since ten years ago on the margin of the anus. It swam rated, and left a fistula which was operated upon by M. Kroon. Opera- tion was not a success, and there re- mains a constant discharge from the anus. Never had pain, or any rene- scence symptom. Never had any ulceration of vagina or discharge as in girl. (No mention of glands, or whether venereal history or not.)	Large ulceration of the perineum and the whole margin of the anus, ex- tending an inch up the rectum. Pale, a little engorged on the margins of all the perineum, four-fifths, and fossa navicularis, so that lower part of vagina is merged into the rectum and separated only by a spur of tis- sue. This destruction disposes the anterior wall of vagina without sep- arating the labia. Anal opening is very much enlarged by the ulcer- ations. There are tags, thickened folds,	Local, of potash, which gave improve- ment. Cauterized May 31 with ni- tric acid. May 29th, she com- menced to have a profuse diar- rhea, and died August 28th.	Death. Autop- sy. Rectal ul- ceration cica- trized. Pus in pelvic cavity between the intestines. Portion of in- jected. Deep ulcers through large intestine and ileum.

Case XIII. — Todd obs. VII. Hypertrophic vegetations of vulva.

Age 18.
1843.

Married. Temperament, nervous and lymphatic. Delicate constitution. Lung trouble. Menstr. regular. Never had venereal disease. Has had leucorrhoea for many years. At 13, had eruptions on perineum, which she thought were due to wounds from leeches applied to bring on her menstruation. These swellings were more numerous on the right than on the left. Pain and blood on defecation since a year, and the trouble has increased. Three months and a half ago entered hospital. Then tumor was size of an egg and resembled a cauliflower excrescence. It was then cauterized and no result. Then was cut off with curved scissors. It was regarded as syphilitic and she had mercury treatment. Not healing, came to Huguier's hospital. Huguier first diagnosed cancer, then changed it to echinome. He says no syphilitic history.

and irregularities about anal orifice. Ulceration which extends back to the coecum. Very little suppuration, purulent, yellow, and very liquid. All the parts are smooth, shining, and violet in color.

Until May 15th, rest, enema, baths, ointment, Then excised. July 7th, 1843. Parts healed. Discharged July 7th, 1843.

Vast ulceration occupying posterior extremity of the labium majus of the right side. Perineum, margin of the anus, and anterior portion of right buttock ulcerated one centimetre to one and a half centimetres, eight centimetres long and five and a half wide. An irregular fissure in its centre which careful exploration shows does not enter the rectum. Left side of anal opening is healthy. Tumor conceals it, and to find it, it must be lifted one side. It leaves one-third of circumference healthy. The tumor is composed of small, round sessile tumors, conical or semi-spherical, sometimes cylindrical. Each tumor is composed of small, red, granular, soft masses, covered with an extremely thin, delicate skin. Bleed on touch. Covered with grayish matter which, if removed, leaves instead of a dull red, brownish, grayish surface, a lively red, granulated, furrowed surface. When patient stands, becomes a violet red. Surface looks like the tongue of a cat. At the posterior extremity of the left labium majus is a tubercular elevation, one centimetre in diameter, looking like an abscess ready to open. It discharges a serous, reddish, bloody matter from the ulcer.

Month of treatment which allayed the inflammatory condition of the parts. Excised superfluous tissues.

Case XIV. — Todd obs. VIII.

Age 18.
1843.

Married. Temperament, Strong constitutional. No children. Was infected two years before. Had chancre and discharge. Month after entering the hospital, she was cured of chancres, but discharge remained, though

Month of treatment which allayed the inflammatory condition of the parts. Excised superfluous tissues.

NO.	DATE.	NAME.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case XV.	West June, 1851.	and Imrean, 198, of Wagon, p. 68, gives this as a sample of the cases which are mentioned as having been seen.	lessened. She led a very irregular life after leaving hospital, and returned because for two weeks the labia majora had enlarged. Inguinal glands which were enlarged before had become enlarged. Folds of anus hypertrophied, anal orifice retracted, and excoriation and erythematous inflammation covered the whole vulva and about the anus and thighs. Was put on mercurial treatment. Left the hospital, and returned again.	lapse is unrecovered, forms a detached, swollen border. The labium is not painful. The right labium minus is somewhat swollen. Ulceration has extended nearly two thirds of the circumference of the lower part of the vagina. A serous liquid bathed the parts. Retraction and induration of the vaginal. Hardening of recto-vaginal wall, five or six continued from vulva, which was dry. Large tumors about perineum and anus. Painful to introduce finger, because of great inflammation about it. Bowels healthy. Great pain on defecation.	ties and tumors about the anus. Healed ten days after operation. Patient became depressed after a while, and had an attack of peritonitis and diarrhoea, and died in ten weeks.	Same as Obs. VI. Hugnier remarks in a case in a man who had died and had estimation of the anapertineal region.
Case XVI.	Salles Dec. 12, 1852.	André M. Nulton, 1852, Georgia. Coaz, des Hop., March, 1854, p. 117.	Married four years. One child. Miscarried from fright at five months. Health good. Leucorrhœal discharge frequently streaked with blood. Pain on micturition and sexual intercourse.	labium and nymphæ swollen, but not much diseased. Abundant puriform discharge. Red, granular, ulcerating surface, painful to touch and bleeding readily. Surrounding the urethra similar conditions, extending up the vagina an inch in breadth by one and a half inches in length. Tissues thickened and infiltrated for some distance on either side of ulceration. Tubercle, size of tip of little finger, covered by unchanged mucous membrane. Feb. 10th, 1852, had a child after five hours' labor. Examined two months after. Great hypertrophy of external parts. Intermenstrual thickened. Clitoris destroyed, urethra detached. Pale, rose-colored, warty excrescences surrounded the orifice. Ulceration greatly increased.	Removal of nymphæ. Tonics, cleanliness, and rest. Removal of all excrescences and growths about the vulva. Had good results from small doses of mercury and iod. of potas.	Healing.
Case XVII.	Salles Dec. 12, 1852.	André M. Nulton, 1852, Georgia. Coaz, des Hop., March, 1854, p. 117.	Disen- sared. Married early. One child, four or five years old. Health good. No engorgement of glands.	Right labium minus was swollen, and increased twice its length and some four times its thickness. Vulva had lost its character, and was like skin. Numberless small depressions. Its	Excision	Cur.

consistence was that of edema. No pain except that from rubbing while walking. The other labium was also involved. In vagina, two tubercles, one white, size of a pea. The other red and granular.

Indurated vulva. Slightly raised. Erip-
tion. Infolent at first. Violaceous
in color, then ulcerations and thick
crusts. The nymphæ ulcerated, very
much enlarged, and surface covered
with wart-like excrescences.

Frequent baths of curel in six
months.
fraxinus excel-
lent, emollient
poultices, nitrate
of silver. Finally
ablated the labia
minora. Healing
Cord liver oil, bol. of Death.
potas., caustics,
Vienna paste,
anulchromic acid;
latter gave
frightful pains,
and she vomited
for twenty-four
hours after.

Ablation. Healing.

Celestine 18 Lymphatic-sanguine Temperament
B. Became very sad and depressed.
Great pain in her hips, which had
increased since menses, which began
three years before.

Marie S. 29 Lymphatic. After several months of
depression during a pregnancy, she
entered hospital with ulcerated lesion
of the vulva, limited to the labia of
the right side. Not painful. Two
months after pregnancy, ulceration
increased rapidly. The patient be-
came cachectic, and died of maras-
mus after fifteen months.

Case XVIII. M. Oct.,
met. Performing
esthimenal re-
gion. Rec. des
Travertins de la
Soc. Med. Jan.,
1861, p. 351, also
Rep. Bul. de Soc.
Anat., 2 S., T. IV,
1859, p. 305.

Case XIX. M. Moul Aug. 16, Emilie F., 11 Antecedent's good. Always well. One
child. Complaints of nothing except
some itching at the approach of
menstruation. Ten years before, on
the free border of left labium majus,
a small tumor, size of a raisin, which
eventually increased to its present
size. It ulcerated, and two months
before there were two hemorrhages
to the amount of a glassful at one
time and two or three at another.

Without serious troubles. Family
history good. Menst. at 18. Since
menstruation remained ab-
sent one and a half years. In spring,
1859, noticed a swelling of left labium
majus, which increased in size and
involved other labie.

Case XX. Martin, Nov. 12, M. Robt 25 Healthy, well built. Healthy as a child.
Mont-chiff for
1859, buch.

Patient was chloro- Cured.
formed and fum-
ing nitric acid ap-
plied, after which
cold-water dress-
ings and weak so-
lution of nitrate
of silver.

A tumor, size of small plate, involving
vulva and stretching before the intro-
itus vaginæ. Covered over with hard,
nodular infiltration, also brown
crusts. Here and there were hard
prominences, size of a bean. A tu-
mor, of almost double the size,
stretched itself from the destroyed
introitus of the vagina to the right
over the labia and back to the rectum.

Given also by Dr. Jan. 23,
A. Richard, Arch. 1851.
Gen. de M. d., 1851,
p. 460.

Case XVII. J. J. J. 1856
Gaz. des Hop.,
1856, p. 183. Hy-
pertrophie esthi-
mène.

Case XVIII. M. Oct.,
met. Performing
esthimenal re-
gion. Rec. des
Travertins de la
Soc. Med. Jan.,
1861, p. 351, also
Rep. Bul. de Soc.
Anat., 2 S., T. IV,
1859, p. 305.

Case XIX. M. Moul Aug. 16, Emilie F., 11 Antecedent's good. Always well. One
child. Complaints of nothing except
some itching at the approach of
menstruation. Ten years before, on
the free border of left labium majus,
a small tumor, size of a raisin, which
eventually increased to its present
size. It ulcerated, and two months
before there were two hemorrhages
to the amount of a glassful at one
time and two or three at another.

Case XX. Martin, Nov. 12, M. Robt 25 Healthy, well built. Healthy as a child.
Mont-chiff for
1859, buch.

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case XXI.—Bod. peritrophic vul. var. III in the Atlas for Gyneceol and Gynaecol. hols.	July 21, 1859.	Widow H.	53	Nine children. Youngest, 17. Menopause since two years. Twelve years leucorrhea. Five years ago, labia swelled and two small wounds showed themselves. Menstruation began to be irregular. Right labium majus, a tumor appeared in the last half year. General health good, though a little weak and decrepit. Inguinal glands enlarged. No appearance of syphilis.	Right labium majus was swollen and thickened in the lower half, felt uneven and hard. Skin was dark red, violet in lower part, bluish above, with several dark red stripes and ridges. Various deep ulcerations about the vulva with swellings and irregularities, including a fistula in the neighborhood of the clitoris and near the hypertrophied nymphæ. About one-half inch from the vulva, was unyielding ring which, through a speculum, showed a red ulcerating surface, which bled easily.	Food, of pot. and applications of iodine. Generous diet. The labia minora and hypertrophies were removed.	Cured October, 1859.
Case XXII.—Dr. J. M. Duncan, Ed. Med. Jour., Dec. p. 490.	1862.	Mrs. D.	28	Four children. Last born two years ago. Woman in higher walks of life. Since last confinement always leucorrhea. Pain on coitus and micturition. Healthy young woman. Reddish about eyelids. On face and neck red papules, some larger than others.	Labia majus and nymphæ hypertrophied, of a bluish leaden tint. Raphe like perineum broad, prominent, and similar surrounding of the anus, but projecting unequally in different parts. Extensive ulceration surrounding three-quarters of the vulva vaginal orifice. Posteriorly, ulceration measures three inches from side to side, one half inch antero posteriorly. Whole ulcerating surface covered with pale granulations and smeared over with pus. Ulcer situated on a surface which felt like parchment or cartilage.	Removal of new tissue. Application of nitrate of silver.	Patient absconded before effect of treatment was known.
Case XXIII.—Mc. Apr. 26. Clinbrook, 1882. of Women, p. 221.	Apr. 26, 1882.	Not given	20	Patient extremely emaciated. Exsanguinated from chronic diarrhea, two years standing. Married twice. After second marriage lost her health; had menorrhagia and soreness of vaginal orifice. Probably had constitutional syphilis. Had swelling which she mistook for piles. Four months ago, a tumor appeared beyond the vulva and gave great pain. Menstr. absent.	Tumor was everted. Bladder, bright red and vascular, size of large egg, protruded through fistulous opening near the symphysis, edges of which were raw. This was the only ulceration. Perineum, septum of vagina and sphincter and were completely destroyed. Surfaces now cicatrized. Margin of anus and posterior part of vulva tuberculated and indurated. No enlargement of inguinal glands.	Not mentioned.	Not mentioned.

Reports also another case following amputation of labia, nymphæ, and tumor of syphilitic origin,

Case XXIV.—J. E. April 1863. Taylor, Gyn. Trans., vol. 6, p. 24. Lupus or ecthyma of vulvo-anal region. Extensive superficial lupus of the whole vulva. Hypertrophy of the labia minora and majora.	A. D.	Monst. regular. Disease commenced a year ago on the right and left side of labia majora by tumefaction of labia. Slight viscid discharge, which excoriated the parts outside of labia.	Same as following
Case XXV.—Ibid. May, 1864. Lupus prominens of the tumor form. Narrow, thin hypertrophy of labia majora.	M. S.	Health good. Menst. at 14. Regular. Parents' health excellent. Disease commenced several months before, with itching of labia, after which a redness appeared. Three weeks after, small elevations were felt about the centre and exterior of both labia majora. These increased in size, number, and extent in two months, when they appeared as described. No pain.	Applications of the Healing mercury. Strong aëtic. Growth increased when they were removed by crushing scissors, and an emollient and cautery was used.
Case XXVI.—Ibid. 1865. H. B. Lupus prominens of the tumor-like tubercular form, hypertrophy of labia majora and minora, and cauliflower myrtiformes.	.....	Health good. Menst. at 15, regularly. Disease lasted over a year at time of consultation. Leucorrhœa at different times. Began with small excrescence each side of labia. No pain. Discharge slight.	Removal as in pre-Healing, cooling case.
Case XXVII.—Ibid. Spring, 1865. Extensive hypertrophy of the clitoris and labia minora. Destruction.	S. H.	Emaciated from diarrhoea. Three children. Labors natural but tedious. No history or symptoms of syphilis. First labor perineum lacerated to anus. Disease lasted over two years. No severe pain. Menst. irregular for past two years.	Supporting Death in two weeks. No post-mortem; had diarrhoea.

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Reports three other cases, but gives no detailed description of them.							
Case XXVII. — G. Not given.				15 Strumous. Mother healthy. Father Six died of tubercle. Ulcers began as hardened tubercles. Patient menstruated regularly.	minora slightly enlarged, firm, solid, and semi-cartilaginous, and dull white color, as were the labia majora. Lower end of right labium minus were four large tubercles, and one below vagina. Rectal septum was destroyed entirely.		
1 Townsend, Boston, Mo. and Surg. Jour. Sept 4th, 1886. Estimation of perforating variety.				15 Strumous. Mother healthy. Father Six died of tubercle. Ulcers began as hardened tubercles. Patient menstruated regularly.	Six or seven ulcers. Upper one above the clitoris, the lower one involving a part of the perineum. Irregularly ovoid in shape. Irregular, sharp, well-defined edges, red, angry-looking base. Sensitive to touch, as were surrounding tissues. No tumefaction, no tendency to spread.	Nitrate of silver. Lead dressing. Wine and nourishing diet.	Healing.
Case XXIX. Th. March 4th, 1890.		Marie A.	30	Always healthy. No syphilis. Parents healthy. Menstruated at 15. Amenorrhoea three months. One child, 2 years, born at seven months. Slight pains in anus after defecation a year before. Six months trouble with urination, and had incontinence three weeks before entering the hospital. No traces of syphilis.	Group of tubercles surrounding the anus. A swelling five to six centimetres high and one to two centimetres broad; dull red. Had not the hardness of carcinoma. Anus was enormously enlarged. Walls and anus were elevated, thickened, irregular, and serrated. An abundant mucopurulent pus. Vulva, labia enlarged, reddened. Large ulcerating surface at inferior commissure, continuing into the vagina. Urethra replaced by a number of small welts and folds of mucous membrane, occupying two-thirds of the vaginal orifice, size of a centimetre, allowed urine to escape. Perineal floor was seat of a vast ulcerating surface. Vegetation oval. The excreescences and tubercles were numerous. Color violaceous. In the midst of the furrows and irregularities, it was impossible to recognize the mentus, vagina, or rectum. After death the salient portions flattened, and became flaccid.	Iod. of potas., cod-liver oil, wine of iron, sulphur baths, tinct. iod., AgNO ₃ .	Negative.
Case XXV. — Leroy Mar. 8, 1880.		Francis C.	27	No trace of syphilis. No swelling of the glands. Scarcitously diathesis, though health apparently good. Has had hemorrhoids for several years. Two and one-half to three years ago, several small swellings came about the anus, which ulcerated. Suffered pain from defecation, and went into hospital. Had antisyphilitic treat-			Death.

ment. Erysipelas of the vulva. No enlargement of inguinal glands. No pain except after urination and defecation. Patient died. In the apex of left lung were two very small tuberculous cavities. Two or three tuberculous nodules in the apex of right lung.

Labia rose-colored, tumefied, hypertrophied. Not edematous. Clitoris and nymphæ swollen, slightly hardened, violet-red. Uterus surrounding vagina, and extending up the canal three centimetres. The anterior border involved the clitoris and right labium minus. Uterus looked phagedenic, covered with yellow mucus-pus. Inoc. with pus. No result.

Anti-syphil. treat. Edema disappeared. No amenorrhœa. Tumor dim. in size.

No swelling of inguinal glands. No syphilitic appearances. Small dis- tult of anus. External parts healthy, except the internal face of the labia minora, which was covered with small condylomata, one or two, as were also the branches of the clitoris. Separating the labia minora there was a swelling of a violet-rose color, two centimetres in extent and three centimetres high, occupying the anterior tubercle of the vagina. A deep ulcer on the urethra, which admitted the tip of finger. The ulcer had also eaten up along the pubis.

Anti-syphil. treat. Edema disappeared. No amenorrhœa. Tumor dim. in size.

No swelling of inguinal glands. No syphilitic appearances. Small dis- tult of anus. External parts healthy, except the internal face of the labia minora, which was covered with small condylomata, one or two, as were also the branches of the clitoris. Separating the labia minora there was a swelling of a violet-rose color, two centimetres in extent and three centimetres high, occupying the anterior tubercle of the vagina. A deep ulcer on the urethra, which admitted the tip of finger. The ulcer had also eaten up along the pubis.

Anti-syphil. treat. Edema disappeared. No amenorrhœa. Tumor dim. in size.

No swelling of inguinal glands. No syphilitic appearances. Small dis- tult of anus. External parts healthy, except the internal face of the labia minora, which was covered with small condylomata, one or two, as were also the branches of the clitoris. Separating the labia minora there was a swelling of a violet-rose color, two centimetres in extent and three centimetres high, occupying the anterior tubercle of the vagina. A deep ulcer on the urethra, which admitted the tip of finger. The ulcer had also eaten up along the pubis.

Anti-syphil. treat. Edema disappeared. No amenorrhœa. Tumor dim. in size.

Case XXXI. — Al May 25, 1872. Not given to No syphilitic history or signs. Death of husband and business losses depressed the woman. Fifteen months before had a profuse vaginal discharge, sometimes tinged with blood. Menstruation absent for two years. Six months after perceived a hard lump at the fourchette. After five or six months of vaginal discharge, she had a severe pruritus, and her face was covered with red eruptions. No swelling of inguinal glands or of the neck. The eruption of the face was now resorbed.

Parents healthy. Scrofulous diathesis. Menstruated at 8. When 18 worked hard; poor food. Then she had leucorrhœa. Had two children at term. Four miscarriages since then. After last had severe pruritus. Could not tell when trouble first began. Five months she suffered pain in side; five months itching; four months coitus very painful; and three months impossible.

Health of patient good in every respect. No pain or disturbance. Never communicated syphilis. Parents healthy. One sister delicate. Menstruated at 15. Married at 16. Nine pregnancies up to 1870. Last twins. Terminated sixteen months before, with abortion, at seven months. Surroundings unhealthy;

Case XXXII. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXIII. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXIV. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXV. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXVI. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXVII. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

Case XXXVIII. — Ft. Mar. 23, H. Engle 38, 1873, m. quest perforating of eschioneme of vulva lasting six years. Symp- toms course of ulceration. Hy- per trophy of peri- vulvar regions,

NO.	DATE.	NAME.	HISTORY.	DESCRIPTIONS.	TREATMENT.	RESULT.
Case XXIV	Feb. Oct. 6, 1874.	Rev. Aurelia, dressmaker	<p>food not good. 1868 had an attack of erysipelas, which recurred in a year. Thought disease began 1870, after her last confinement, when had profuse leucorrhœa. Suffered no pain.</p>	<p>ment. On the vulva, but not extending into the vaginal canal, were ulcerations on left nymphæ two centimetres by two and one-half and four to five centimetres deep. Erysipelas irregular and sinuous at the base of the tumor. The margin of the ulcer was hardened and irregular.</p>	<p>Like preceding Cured.</p>	
Case XXXV	Feb. Oct. 10, 1874.	Marie D. domes- tic.	<p>23 Father well. Mother affected with lung trouble. A sister died of chest trouble. Patient constantly ailing until 10. Multiple adenitis; frequent ophthalmias. Menstr. at 15½ years. No syphilitic history. No child or miscarriage. Two years before had suppurating inguinal glands of both sides. Attending physician pronounced non-venereal. Centricæ remain. A year after had whites, swelling of the labia majora and minoræ, after which there was itching, which caused rubbing and scratching, and soon there appeared small ulcerations, which increased little by little. No pain. Health was excellent. Great deal of itching, especially at night. Incubation performed with negative results.</p>	<p>Arise swollen of the face. Arise milium of the throat and deltoid region. A tumor size of a small nut situated right nymphæ upper portion, of fixed with a base one centimetre in diameter. The labium on which it is implanted is larger and more edematous than that of the other side. Color of all the vulva deep red. An ulceration, dull and pale, occupied the vestibule, showing some ulcerated furrows towards the meatus minims, which was also surrounded by ulceration. The whole vulvar ring was ulcerated, and the right caruncle myrtiliformes were destroyed. Borders hard, rounded, folded in, and had a whitish tinge, glands enlarged. Uterus had grayish base for the most part. Intertrigo of genital and folds.</p>	<p>Under treatment, Improved.</p>	
Case XXXV	Feb. Oct. 10, 1874.	Marie D. domes- tic.	<p>22 Syphilitic history. Menstr. normal 1861 contracted syphilis. Chancres of left labium majoris. Had mercurial treatment, but secondary syphilis had remained after two years. Ulcerations recognized since February, 1874. Began with itching which obliged her to scratch. Ulcerations increased very gradually. Shooting when passing urine, but can control the urine.</p>	<p>Labia majora hypertrophied, and some edema. Irregular ulcer about the vulva and meatus minims. Edges very unequal, irregular, and irregularly cut in the vestibular region, rounded, hard, and making a ridge in the midst of the ring and edema of the vagina, deep and irregular. Suppurating seat, but of a reddish, sometimes sanguineous color. Meatus was replaced by an irregular opening, softened, large enough to admit the index finger. The whole anterior tubercle of the</p>	<p>Under treatment, Improved.</p>	

Case XXXVI.—F. 1874. A candida pustule was cured of esthiomene after several mos. General tonics.

Case XXXVII.—F. 1874. hop Cure Polymyri- ten, cod liver oil, 25th. Cicaut- zation. Dressing twice a week of iodoform and charcoal.

Two empty- vagina was destroyed. The anus, and creases of ancient plaques nec- quises. Uter, which occupied the urethral region, all the vestibule, and spread itself out like a horseshoe on the labia minora without attacking the four cheffe. The sore was broken, ir regular, yellow base, rounded edges. Did not penetrate the vagina. Lat tile or no suppuration. Anterior tu bercle and urethra were entirely de- stroyed.

Present condition, 1874. Left labium In- fold, podas, hop Cure Polymyri- ten, cod liver oil, 25th. Cicaut- zation. Dressing twice a week of iodoform and charcoal.

Not given 30 Scrofulons. Condition very bad. Had to suffer from privations. No trace of syphilis. Advanced pulmonary tu- bercles. No pain. No enlarge- ment of the glands. Micturition painful. Disease lasted eighteen months, with progressive hypertro- phy of the parts, and great itching. No syphilitic history.

Father and mother healthy. Two brothers died in infancy. Two sis- ters well. One had enlarged glands in childhood and several attacks of sore eyes. Been well as child, ex- cept two attacks of swelling of cer- vical glands. Menst. at 12. No children or miscarriage. 1851 had chancres, followed by plaque mu- queuse. Three months in hospital for it. In October, 1852, disease disap- peared, and treatment ceased. In April, 1883, hypertrophy of the left labium minis without pain, or other modification, heat, or redness. Skin pale and colorless. Labia were pasty, but in several points several nodules could be felt, immovable, circumscribed, and separated from each other in the lower labium. Sometimes the itching was intolera- ble. Scratching caused an ulcer- ation when she came to the hospital. IK. was prescribed. Nitrate of sil- ver, chloride of lime, acetic acid were applied, but ulceration in- creased in size. No suppuration. Patient went out not cured in July; since ceased medication. Health good; also digestion. Sickness twenty-eight months.

Case XXXVII.—F. 1874. Not given 30 Scrofulons. Condition very bad. Had to suffer from privations. No trace of syphilis. Advanced pulmonary tu- bercles. No pain. No enlarge- ment of the glands. Micturition painful. Disease lasted eighteen months, with progressive hypertro- phy of the parts, and great itching. No syphilitic history.

Case XXXVII.—F. 1874. Not given 30 Scrofulons. Condition very bad. Had to suffer from privations. No trace of syphilis. Advanced pulmonary tu- bercles. No pain. No enlarge- ment of the glands. Micturition painful. Disease lasted eighteen months, with progressive hypertro- phy of the parts, and great itching. No syphilitic history.

Case XXXVII.—F. 1874. Not given 30 Scrofulons. Condition very bad. Had to suffer from privations. No trace of syphilis. Advanced pulmonary tu- bercles. No pain. No enlarge- ment of the glands. Micturition painful. Disease lasted eighteen months, with progressive hypertro- phy of the parts, and great itching. No syphilitic history.

Case XXXVII.—F. 1874. Not given 30 Scrofulons. Condition very bad. Had to suffer from privations. No trace of syphilis. Advanced pulmonary tu- bercles. No pain. No enlarge- ment of the glands. Micturition painful. Disease lasted eighteen months, with progressive hypertro- phy of the parts, and great itching. No syphilitic history.

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case XXXVIII. Frequent, blood, erythematous esthiomenes of the vulva. Elevation of the vegetation of the internal aspect of the labium minora.	Oct. 26, 1881.	Maria B., shop girl.	20	Father died of lung disease. Mother of cholera. Older brother and sister in good. Another brother and sister in delicate health. Patient always sick as a child. Genicular swelling in the neck. Frequent ophthalmias and keratitis. Scrofulous. Syphilitic history. Three or four soft chancres on left labium majus. Disappeared at end of month. Inguinal glands of same side swelled and suppurated, following year mis-carried at three months. Two or three months after she noticed that the skin was discolored, purplish, and dry rather than moist. Two weeks after that appeared a small ulcer in the neighborhood of the urethra, which increased during the eight months succeeding, in spite of applications of nitrate of silver.	Elevations condition of the labia minora. Violet color of vulva similar to pregnancy. Around the vulvar orifice, presenting form of a horse-shoe, descending each side along the nympho hymenal fold without attacking the post-rior commissure of the vulva. Bright red in color. No pus, but serious serious discharge. The patient had not suffered any pain. Had not communicated syphilis. No result from inoculation with the serum, therefore the diagnosis of a scrofulous esthiomenes.	Same as above. Cure. Discharged January 16th, 1875.	
Case XXXIX. Frequent, blood, erythematous, and hypertrophic. Also reported in Vol. M. C. T. XXII. 1876, p. 562.	Feb. 1876.	Maria D.	20	Numerous scrofulous exulcers. Syphilitic. Moist at 17. No pregnancy. Menstrual. No pain. No ganglionic enlargement. The trochanter has lasted a year. Menstruation ceased at its appearance. Commenced with white discharge. Itching and smarting, very intense, followed.	Ulceration surrounding the anus, spreading upon the internal and superior surface of the nymphs and extending to the anterior wall of the vagina. It was of a rough, red appearance. The other parts of the vulva were very considerably hypertrophied, giving to the touch a sense of hardness, elasticity. Skin smooth, and presenting irregularities, giving it the appearance of a raspberry; vaginal opening somewhat retracted. Internal and superior portion of right labium majus has an ulcer, irregular, slashed, little indurated, deep, yellowish, unequal base. Size of a six franc piece. Labia and hood of clitoris hypertrophied. Swelling hard; elastic. Great swelling of right labium in all its bulble, ulcerated like a whole extremity. Lengthened like a	Coal liver oil, syrup of iodide of iron.	Remained stationary.
Case XL. Frequent, blood, erythematous, and hypertrophic. Also reported in Vol. M. C. T. XXII. 1876, p. 562.	March 1875.	X ...	48	Scrofulous. Sores in cervical region. Syphilitic history. Cures ceased since two years. Lesion of more than a year, commenced with leucorrhoea, followed by intense itching, increased gradually. Not treated by anti-syphilitic treatment.	Effects of treatment. No result. ment could not be ascertained, as patient had to be discharged for bad conduct.		
Case XLI. Frequent, blood, erythematous, and hypertrophic. Also reported in Vol. M. C. T. XXII. 1876, p. 562.	Dr.	Female F.	14	Health good though delicate. Recently married. Frequent six months.	Ulcers, erythematous, and hypertrophic. Lengthened like a		

<p>Andreas, Rev. Chm. Med. Arch. Gen., 1876, p. 665.</p>	<p>Case XLII. Wine. Sept. 26, 1878. Iod. Potash, der Weddellon. Sox. Org., p. 248. Case E. Lupus hyper- trophic vulvæ.</p>	<p>From</p>	<p>28 Father died of consumption; mother of inflammation of the bowels. Healthy as a child. Menst. at 15. Painful. Lasted fourteen days at first; afterward three to four days. 1872 natural labor. Autumn, 1876, had considerable leucorrhæa. Tall, powerful, brunette. Healthy. No special pain. Little discharge. No swell from the ulcer. Difficulty in sitting, walking, and in urinating.</p>	<p>29 Parents healthy. Chlorosis from 19 to 25. Menst. at 19. Postponing at first, then every three weeks regu- lar with pain. Once, when 21, ceased for two and one-half months, and reappeared, with great loss of blood from month and genitals. Since that time patient had pains in back and pelvis. 1870 colour of the lower ex- tremities and upper also, which ap- peared and disappeared from time to time. 1873 had inflammation of the eyes. 1871 first perceived swell- ing of unequal region. 1872 a break- ing out on the mons veneris, which lasted three to four years. Hemor- rhoids and varicose veins also devel- oped in the lower extremities. Pa- tient was healthy in appearance. Had acne. Swelling of vulva increas- ed slowly, was painful in resting or sitting, but not in walking.</p>	<p>Whole vulva swollen. Dry. Flat in- ductions here and there, also in places like edema. At the base of the clitoris between the nymphæ and the right labium minus were several long ulcerating fissures by which the right nymphæ was bored, which were very sensitive. Labia minora were very much swollen. The nymphæ projected two to three cen- timetres beyond them. The swell- ing surrounded the clitoris, which fell dry, and at times gave rise to great itching. A fissure two cen- timetres deep surrounded it, and its borders were somewhat undermined. A similar fissure at the posterior commissure. Several crusted hemor- rhoids about the rectum.</p>	<p>Iod. potas., appli- cation of fuming nitric acid. Improved. Dis- charged June 29d, 1876. Re- turned. Am- putated nym- phæ. Re- turned again after 3 years' treatment.</p>	<p>to the surface, and coagulated surface to sulphur bath, born dead at 7 months.</p>
--	--	-------------	---	---	---	--	---

NO.	DATE.	NAME.	AGE.	HISTORY.	DESCRIPTION.	TREATMENT.	RESULT.
Case XLIV.—Cay. la. Bul. de la Soc. Anatomique, 1881. Case of eschio- mene of the vul- va tuberculous- cerative.	Feb. 16, 1881.	Madelin e 42 Dubreu il.	25.	Scrofulous history. One child at 25. Health good until January, 1870, when gave history of beginning phthisis. She died the day after en- tering the hospital from the acci- dents of that disease.	Vulva swollen, especially about the labia majora. Hardened tubercles. Ulcerations of internal surfaces of the labia, principally of the left. The anus and vagina formed a chalice, lined with violet vegetations. A brittle-separated vagina from rec- tum. Microscopic examination of tubercles showed the characteristics of lupus. Infiltration of the con- nective tissue with embryonic ele- ments.	.....	Death.
Case XLV.—Angus McDonald, Ed. Journal. April, 1884. Lu- pous of the vulvo- anal region. Case of Duncan, p. 659.	.....	Not given	40	Disease lasted six or eight years. No involvement of inguinal glands. At one time disease regarded as carci- nomatous. Case known and de- scribed by Dr. Duncan six years before. While disease was exten- sive she had a child. Patient was able to attend to household duties.	Bluish thin scars on the hips, result of healing of ancient ulcers. Entire ano-perineal region was gone, leav- ing hollow space size of fetal head. Urethra and mucous membrane be- tween it and cervix was destroyed. Latter was healthy. Anus and rec- tum were destroyed. Tight aperture, just large enough to admit the fin- ger, was the entrance to the bowel. Could control feces if they were hard. There was never any peri- tonitis at any time. Dr. McDonald said her bowel was dissipated, and hung loose like a sleeve. Examination showed r labium majus and minus, and small parts of left were affected. Extended back on perineum and upward into vagina an inch. Had a firmness and rigidity accompanied with hypertrophy. Labia majora, especially left, abnor- mally large. Two nodules, situated at the anterior commissure size of marbles, others one-third the size. Deep rose color, and inner aspect where they meet is raw. Separating labia majora, there is an ulcerating surface, from which exudes a terni- ous, fluid. Ulcerated surface is	.....	Death by diar- rhea and ex- haustion.
Case XLVI.—Ibid., March, 1881.	March, 1881.	Mrs. B.	33	One child. Patient healthy. Fell while skating a year before. Had swell- ing of labia. Pain on micturition and connection. No history of syph- ilis. No involvement of glands, in- guinal or other.	Labia majora, especially left, abnor- mally large. Two nodules, situated at the anterior commissure size of marbles, others one-third the size. Deep rose color, and inner aspect where they meet is raw. Separating labia majora, there is an ulcerating surface, from which exudes a terni- ous, fluid. Ulcerated surface is	Cut, gouged, and Cure. applied Paquin cure.	.....
Case XLVII.—Ibid., Oct. 31, A. C. 1882.	Oct. 31, 1882.	A. C.	46	Married. Eight children. Discharge of whitish yellowish color, at times bloody; recently watery. Spots ap- peared on vulva, which increased in size and broke into open sores. Pa- tient always strong and healthy. No history of malignant disease. Neither inguinal nor other glands in- volved.	Labia majora, especially left, abnor- mally large. Two nodules, situated at the anterior commissure size of marbles, others one-third the size. Deep rose color, and inner aspect where they meet is raw. Separating labia majora, there is an ulcerating surface, from which exudes a terni- ous, fluid. Ulcerated surface is	November 17th, lu- boid tissue re- moved with gouge, scissors, cure.	Cured January 24th, 1881.

Case XLVIII. -- C. Re- B. Kelsey, Rare Affections of the Rectum, and Anus, N. Y. Med. Journ., August 7th, 1886.	Not given	55 Neither syphilitic nor serofulous his- tory. Five children. Several mis- carriages. Health good.	towards the posterior commissure one and one-half inches in breadth by three inches in length. Both labia minora are destroyed by ul- ceration. Posterior portion of left labium minus is hypertrophied and separated from the rest of the vulva so as to present a polypoid excava- tion. The ulceration burrows up an inch towards the clitoris. Consider- able hypertrophy of the tissues sur- rounding the ulcerated surfaces. At no place does it ascend more than an inch up the vagina. Anterior nodules were large warts. Large round cells of lupoid tissue lying in a matrix of connective tissue. Ac- tively proliferating epithelial tissue embracing bundles of round cells.	Not mentioned	Not mentioned.
			Rectum and vagina converted into one cavity. Perineum was a slight bridge of tissue from one labium to the other. Size of a quill. Rectum and vagina ended in a large ulcerating cavity. Sphincters were entirely destroyed, and the edges of the cavity were surrounded by fleshy masses of hypertrophied tissues. The ulceration, though of superficial extent, was not hard at the base. Edges hardened and infiltrated. Slightly raised, but not undermined. Discharge sanious. Very little pus.		

Loebert reports four cases under the head of "Cancroïde de la Vulve" in "Maladies Cancreuses," p. 674. He speaks of them in a general way without names or dates. Compares them with Huguier's cases, etc.
Dr. J. M. Duncan reports four cases under the title "Hemorragic Lupus," Ed. Med. Journ., July, 1884. It is a question whether these cases are more than simple chronic ulcerations.
Dr. Bonigard reports a case of large tumor under the title of "Loupe de la Vulve," Gaz. de Hôp., 1863, XXXIX., p. 406.

uniform result in the cases which have been reported,¹ most observer remarking on the proliferation of small cells in groups.

¹ Huguier submitted to M. Ch. Robin specimens from four of his cases (VIII., IX., XI., XIV.), and he gave as the result of his examination that they showed identity with lupus of the face. First layer, pavement-epithelial cells polygonal, rectilinear, with circular or oval nucleus, surrounded with fine granulations. Second layer, fusiform fibres, epithelial cells, and cellular-tissue fibres interwoven. Third layer, the tissue soft vascular, with cells in fewer number and the same fusiform fibres.

M. Vulpian (Case XXX.) made a microscopic examination of the case of Leroy des Barres. Low power, he saw rose-colored spots which, treated with glycerin and acetic acid, showed themselves to be blood-vessels about which clustered thickly cellular elements, and which became more sparse as the distance from them increased. They were found also in the space about the venous vessels. They were numerous in the papillary layer, but more pronounced in the middle layer.

M. Cornil (Case XXXII.) made examinations in case of Bernutz, and found alteration of lymphatics and hypertrophy of the papillæ. Blood-vessels of papillæ gorged with blood, superficial cells *vesiculeuse*, those in contact with papillæ with a long nucleus, connective tissue fine and delicate, inclosing in its meshes embryonic cells. Lymphatic vessels dilated, walls thickened by a deposit, more or less considerable, of endothelial cells.

De Sinéty ("Manuel Pratique de Gynecol.," p. 64).—Infiltration of connective tissue with embryonic cells. Dilatation of lymphatic vessels. MM. Homelle and Ch. Monod (quoted by Fiquet) consider *esthiomène* of the vulva, the hypertrophy and inflammation of the papillary derma, with *foyers* of infiltration of lymphatic cells and masses of embryonic elements.

Fiquet. Epidermis for the most part normal. Derma. Vessels of papillæ are all hypertrophied, but irregularly; vessels dilated, engorged, and infiltrated with embryonic cells. Layer beneath the derma, loose connective tissue, dilated vessels, around which are cell elements so abundant as to form a kind of sleeve.

Mr. Paget made examination in Mr. West's case. Reported natural tissue of mucous membrane infiltrated with small round cells of inflammation and repair. There were no new-formed material or structures of peculiar kind.

Winckel (Case XLII.)—Infiltration like lupus, small round cell atypical, begun and concentrated around the vessels; these appeared also in papillary layer; in neighborhood of sebaceous and sweat glands, and the hair follicles they were numerous and formed lines where the skin contained muscular fibres.

Dr. J. W. S. Arnold (Hypertrophic Tubercular Scrofulide of Vulva. Piffard, "Dis. of Skin," p. 108.)—Masses of small round cells permeated everywhere by new vessels quite close together, running sometimes

The histology of lupus itself is in an unsettled state, beyond that it is a proliferation of embryonic cells, but whence this proliferation originates, whether from the rete, the corium, the superficial layer, the space which separates the glands, the papillæ and the cellular tissue, is a matter of dispute. Some observers remark on the presence of giant cells, but they are not always seen. It remains yet to be proven whether there is a distinctively lupus bacillus. Should this question be settled in the affirmative, it would help in the matter of diagnosis. Auspitz¹ in his researches found the lesions of syphilis and scrofula to be exactly the same as those of lupus. The microscope, then, at present cannot do more than differentiate these ulcerative lesions from carcinoma.

An attempt has been made to establish a connection between the disease and disturbances of menstruation or the incidents of pregnancy; but the cases brought together, while showing that cessation of menstruation has sometimes occurred and that the disease has followed pregnancy, offer no sufficient foundation, in my opinion, for such a statement.

The treatment employed for these cases has been anti-syphilitic, the tonics and cod-liver oil, especially by those who hold the theory of the scrofulous nature of the affection.

Locally escharotics, astringents, and dressing of various kinds have been used. The most satisfactory results have been obtained by amputating the hypertrophied parts, and cauterizing the bleeding and ulcerating surfaces. It is the treatment which I shall use in the case presented as soon as the patient will consent to give up her occupation and submit to it. Many of the cases reported, like mine, will not undertake any regular treatment. Their general health is so good, and they suffer so little

parallel; vessel-walls thin. Large irregular oval cavities containing red blood-corpuscles. Diffuse infiltration of red blood-corpuscles through large tracts mingled with round nucleated cells. Long flask-shaped prolongations of rete-cells running obliquely downward. In older formed portion of the growth, newly formed, broad fibrillar connective tissue bands mingling with the above. No giant cells. With the exception of the rare cell heaps, the other appearances are such as are found in germinal tissue generally.

These, with the case reported in this paper, are all the detailed accounts of microscopic examinations that could be found.

¹ Gazette Hebdomadaire, fév. 24, 1885. Quoted from Med. Jahrbücher, 1864.

inconvenience unless the bladder or rectum is involved, that they neglect their opportunities, so that the number on the list of "not improved" does not fairly represent what might be done for them.

There have been six deaths, which have resulted from peritonitis with ulcerations of the bowels. In some instances, the liver has been found to be fatty. Some writers, Huguier, Lebert, and Hildebrandt, regard this as the termination peculiar to the disease. In one case there were tubercles in the lungs, and the evidence in the others is not sufficiently clear that the result was not a chance accompaniment to the disease rather than a direct outcome of it.

"THE MADISON," 25 Madison Avenue, }
New York, May, 1887. }

A CASE OF EXTRAUTERINE PREGNANCY.

BY

GILBERT D. GREYOR, M.D.,
Park City, Utah.

MRS. B., æt. 31, mother of two children, youngest 4 years old, has not been pregnant since last child was born. General health has been excellent.

On October 23d, 1886, while passing the house, was called in to see the patient. Found her on a sofa in her afternoon dress, very cheerful and joking her husband for having me stop. She was complaining of a little pain in the left inguinal region. She told me she had ceased menstruating a few days previous, but that it had not been natural for two or three months. Menstrual blood darker than normal, the period lasting for nearly two weeks, but not profuse or continuous.

On questioning, she gave a history of a somewhat similar attack in the early part of July, which confined her to her bed for a few days, at which time a physician was called, but did not tell her his diagnosis. Concluding that she had had at that time a little pelvic inflammation, and was again threatened with a like attack, I ordered an opiate with hot fomentations and rest in bed. I now left the house and dismissed the case from my mind. The following day the husband came into my office and volunteered the information that his wife was all right, but he had kept her in bed all day, much against her will. That night,

about 10 o'clock, a messenger came after me in great haste, saying Mrs. B. was dying. On arriving at the house, I found that while turning in bed she had been suddenly seized with a terrific pain in the left ovarian region, accompanied by sinking sensations. The countenance was deadly pale and pinched, pulse rapid and almost imperceptible at the wrist, skin cold and clammy. There was no doubt but that the patient was suffering from severe shock. Though there was not much tympanites of the abdomen, it was so exquisitely tender that a thorough bimanual examination was out of the question; but a digital examination revealed that the cervix was low down, os patulous, and uterus enlarged. Nothing could be felt at that time in either broad ligament; probably this failure was due to the fact that the examination was hasty and imperfect on account of the suffering of the patient. Suspecting that there was a possibility of the case being a tubal pregnancy with rupture of the tube and perhaps of the sac also, I sent for my friend, Dr. Mantor. While awaiting his arrival, I set about rallying my patient with hypodermics of morphia and brandy and applications of heat to the extremities. In half an hour's time the pulse had begun to improve, and the pain was nearly under control, though the countenance still had a very bad appearance. On the arrival of Dr. Mantor, I stated my fears and wished him to make a careful examination. After examining the case, the doctor thought it possible that I was right, but advised to wait developments, as it was very probable she was pregnant in utero.

It was finally agreed that I should remain with the patient, and if any symptoms developed that indicated internal hemorrhage of a serious nature, I should send for him and we would perform laparotomy. The patient steadily improved during the night, so that before morning I felt safe in leaving her.

She steadily improved for the next few days under opiates, fomentations, and counter-irritants. The bowels were moved every second day by enema. At the end of a week the tenderness and tympanites had so far disappeared that the fundus of the uterus could readily be appreciated above the symphysis, and a little to the right. The left side still continued tender to the touch, and appeared to be occupied by an exudative mass. I now felt quite chagrined at my hasty diagnosis, and fully believed that it was an ordinary case of pregnancy complicated by a parametritis. The patient was around the house in a few days more, and within two weeks from the first time I saw her she was again on the street. On December 7th, having been informed by the husband that his wife had been flowing more or less since I had last seen her, at my request she submitted to an examination in my office. She now described the discharge as sero-sanguinolent, and at times "something would come away from her." The abdomen was somewhat enlarged; cervix carried close under the symphysis and a little to the right. Entire cervix patulous as far as the internal os. Douglas' cul de-sac and the left side of

the pelvis were filled with what felt like an exudative mass. I could get no fluctuation, nor could I map out any distinct border. There was some tenderness on pressure, the temperature of the vagina was increased, and its arteries could be felt pulsating very distinctly over the most prominent portion of the mass. Again I felt much disposed to pronounce it a case of extrauterine pregnancy, and meeting Dr. Mantor shortly after, told him of my opinion and the reasons for it.

On December 16th, I was again called to see the case and found that she had been in bed for several days suffering with considerable pain in the left iliac region. There had been no rigors, but a little elevation of temperature and a quickened pulse. She at this time first admitted the possibility of her being pregnant. The abdomen was rapidly enlarging and she thought she felt life.

The breasts were a little enlarged and more firm than normal. A digital examination revealed nothing new from what I had found a week previous. The next day, Dr. Mantor examined the case and we discussed the advisability of exploring the cavity of the uterus and settling the question at once, but finally concluded to wait further developments, as there was the possibility of its being a normal gestation complicated by parametritis (for such a case see Pepper's "System of Medicine," Vol. IV., page 216). For the next two weeks I saw the case every day and found matters growing worse. Pulse increasing in rapidity and of a bad character. Temperature varying from 99° F. in the morning to 102° F. at evening. Profuse perspiration at night which was rapidly exhausting her strength. Still there were no rigors. She had become discouraged and clamored loudly for something to be done. Her friends, as well as myself, had become extremely anxious and uncertain as to the result, and I felt that if it should prove a case of abdominal pregnancy I was losing valuable time. So on Christmas day I determined to settle the question by exploring the cavity of the uterus.

The condition of my patient at this time was about as follows: emaciation very marked, pulse 110, temperature 101° F., skin relaxed, abdomen enlarged as high as the umbilicus, resembling pregnancy, but broader and more flattened and quite tender to the touch. Sero-sanguinolent discharge from the uterus, external os patulous and cervix fixed to the right, close under the symphysis. The mass in the cul-de-sac and on the left of the pelvis still felt like an indurated exudation, only the pulsation of the arteries was so marked as to suggest the site of a placenta. The body of the uterus could not be mapped out by bimanual palpation. Bowels constipated and moved with much pain by enemata.

I now had the patient anesthetized and introduced a sound into the uterus three and three-quarter inches; removing the sound, I next passed a Palmer's steel dilator into the cavity of the uterus, and while the blades were fully separated I carefully exam-

ined the interior of the uterus and found it empty. A thorough bimanual examination was now made and both Dr. Mantor and myself satisfied ourselves that it was a case of abdominal pregnancy with a fetus of four or five months. The patient recovered from the anesthetic nicely, and after administering a hypodermic of morphia, I left her feeling but little worse for what she had gone through. That evening I used the galvanic current with one pole over the sacrum and the other over the abdomen; beginning with six cells and gradually increasing the number to eighteen and then diminishing to six again. The poles were reversed once or twice at each sitting, and each application lasted ten minutes. These applications were repeated once a day for ten days. The patient was quite exhausted after the first application, but it was the only time she complained of any bad effects from the current. From this time on, there was a rapid improvement. The discharge from the uterus ceased; the pain, tenderness, and enlargement of the abdomen rapidly disappeared, so that in three weeks from the first use of the galvanic current there was nothing left of the enlargement of the abdomen but a small lump on the right side, which proved to be the fundus uteri. By the 1st of February, the patient was able to take charge of her household duties. On February 6th, she began menstruating which lasted six days and the flow was quite profuse. Menstruation in March was perfectly normal.

On March 24th, I examined the case and found the uterus still a little enlarged, but normally situated and region of right broad ligament normal. On the left there was still some abnormal thickening of the tissues, also slight tenderness on pressure. Uterus not as movable as normal. General health excellent.

It was only after reading an article in the *Medical Record* of February 27th, 1887, by Dr. J. W. Johnstone, on a successful case of primary laparotomy for extrauterine pregnancy, that I thought of placing on record the above case. As that writer seems to have imbibed the European idea that electricity is of very little use in the treatment of extrauterine pregnancy, and lest others, in whose hands a laparotomy might be less safe, should likewise become possessed of a similar idea, I thought it well to go into details somewhat carefully. I am well aware of the fact that a surgeon who removes a fetus from the abdomen and can exhibit it to the wondering friends is much more liable to gain celebrity than one that simply stops its growth by the use of electricity; while the former can present the specimen to his pathological society and have the case published in several medical journals before his patient is fairly out of bed, the latter will more likely have his case set aside as a mistake in diagnosis.

The object of both is the preservation of the mother's life. Electricity is perfectly safe in the hands of any one. Laparotomy is dangerous except in the hands of a few. Of course, electricity is not applicable to those cases that have passed the fifth month, nor is there any course for us to pursue but to perform laparotomy if there is continued hemorrhage after rupture, and a neglect to do so, as Prof. Thomas says, would be criminal. As for the after-histories of these electric feticides, we can say but little at the present time. A few cases of peritonitis have been reported as following, at a more or less remote period, treatment by electricity; but it has not been made evident that the ectopic fetus was the cause of the peritonitis. So we can say that both in its immediate and remote results electricity is a perfectly safe agent in the treatment of these cases.

In the diagnosis of extrauterine pregnancy, which all authorities agree to be difficult, it appears to me that enough importance has not been placed upon the character of the pain. It may have existed as a dull, uncomfortable feeling for some time, but which gets suddenly worse on some slight exertion, and this is the time, usually, that the physician is called to see the case. He will find, besides the pain, considerable shock. It is the shock which accompanies the pain that characterizes this pain from that of pelvic peritonitis. In looking over the record of these cases where the symptoms have been carefully noted, I find that mention is made of the shock that accompanies the pain in nearly every case. The sero-sanguinolent discharge is another important symptom. With my case, it was at times bright, but usually dark-brown or watery, tinged with blood. No true decidua was discharged at any time, but from the character the discharge assumed at times, I judged that it was undergoing disintegration within the cavity of the uterus.

If, then, we have the two above prominent symptoms, with others that would lead us to suspect extrauterine pregnancy, we may conclude it safe to settle the capital point, of whether the uterus is empty or not. This will enable us to exclude normal pregnancy, and if the diagnosis now lies between extrauterine pregnancy and pelvic hematocoele, an enlargement of the cavity of the uterus will decide in favor of extrauterine pregnancy.

I mention these important points as I am led to believe that

extrauterine pregnancy is of more frequent occurrence than our text-books would indicate, from the fact that so many cases have been reported during the past few years, and further that we now have a treatment, which, if begun early, is perfectly safe and effective in the hands of any physician.

The opinion that all extrauterine pregnancies are primarily tubal is gaining ground rapidly, supported by such authority as Prof. T. G. Thomas and Mr. Lawson Tait. Thomas says: "I feel inclined to believe that at the commencement of its development the impregnated ovum never attaches to or draws its nourishment from any other parts than those lined by the mucous membrane of the uterus or tubes" (*New York Med. Jour.*, June, 1875). Tait says: "I have known at least twenty post-mortem examinations of women who have died from ruptured tubes. In not a single instance which I have seen, nor in any of which I have found record, has the pregnancy been anywhere but in the tubes" ("Diseases of the Ovaries," page 75). He says again: "The cause of death in these cases of tubal pregnancy is invariably hemorrhage." Also, "occasionally the rupture takes place without hemorrhage or at least fatal hemorrhage. In what percentage this fortunate issue occurs we do not yet know, but it is probably not large." Now, if in each case we have a tubal pregnancy to begin with, all the other varieties of abdominal pregnancy that have been noted must have become so by rupture of the tube and escape of the ovum; consequently, we can very properly infer that rupture of the tube is not as fatal an accident as that noted authority and our text-books would lead us to believe.

In my own case and in the majority of cases that have been carefully recorded, we find a history of sudden, intense pain with more or less shock. This, it would seem, means the stretching beyond endurance and perhaps rupture in a slight degree of the tube, or more properly of the serous coat of the tube. These partial ruptures may be repeated a number of times before we get a rupture sufficiently large to cause a fatal hemorrhage.

It is during this period of partial ruptures that we should complete our diagnosis and begin treatment either with the galvanic or faradic current.

If the first rupture of the tube be sufficient to allow the escape of the ovum, then I can understand why it would almost neces-

sarily result in a fatal hemorrhage unless interfered with by a laparotomy. But, fortunately for the surgeon inexperienced in abdominal surgery, this condition obtains only in exceptional cases, if at all.

UTERINE DYSPEPSIA.

BY
HORATIO R. BIGELOW, M.D.

A RECENT article by Dr. Jaffé under this caption seems to throw light upon an interesting class of cases that torture the patience and exhaust the resources of the gynecologist. A uterus misplaced or perverted in function, a pseudo-catarrh of the stomach, a varied symptomatology of mucoid degeneration of the entire alimentary tract (taken collectively known to us as dyspepsia), such histories as this are not infrequent, and it requires a very nice balancing of evidence to make out whether the dyspepsia depend upon a primary pathological condition of the mucosa of the stomach and bowels or whether it be a reflected neurosis. There are some points of great weight which Jaffé has passed by without notice. These are :

1st. The increase of the area of dulness over the liver with or without hardness and enlargement, and with or without a "tender spot."

2d. The exaggeration of the "liver symptoms" and "gastric symptoms" during menstruation, and the more than causal relation between normal menstruation and a physiological liver.

3d. Chronic constipation as a factor in the production of the gastric symptoms, and its relation to atony or to catarrh of the gall-ducts.

4th. Chronic constipation due to atony of the lower bowels in which condition the feces descend to the internal sphincter, but the patient is only able to unload the rectum by "forcing;" this expansion of the bowel exaggerating the chronic metritis, and the bearing down at stool creating more or less uterine prolapse.

5th. Irritation of the alimentary mucosa caused by Karlsbad salts or aperients or cathartics, administered to relieve the con-

stipation, but which create a supersensitive mucosa, with great liability to gastric catarrh.

6th. Constipation due to reflex spasm of the gall-duets, which in turn may be due to some pelvic derangement.

7th. The fact that in almost every case there will be present, as co-existing factors, a *backward displacement* of the uterus and an increased area of hepatic dulness.

Every one, I take it, will agree with Jaffé that dyspepsia means nothing more than a set of symptoms pointing to faulty digestion. There may be, first, a nervous dyspepsia; second, a gastric dyspepsia; third, a gastro-intestinal dyspepsia; fourth, a pancreatic dyspepsia; fifth, a uterine dyspepsia. Unfortunately for us, this latter division seems to partake of the characters of each of the others, and, unfortunately too, habits of faulty functioning may have become so firmly rooted through years of pernicious action that it is almost a superhuman task to educate the alimentary tract into the ways of health. In the four undoubted cases that I have seen in Europe, the points which I emphasize were salient features. In all of these women, there were retroverted uteri (in two, the uterus was immovable, with marked utero-sacral tenderness from perimetritis, exudations, and adhesions). In three cases, the area of hepatic dulness was decidedly enlarged; in the other case, the area was also increased, but not so markedly. In all four, the liver was more resistant than normal, and in all of them, at the lower border of the lower lobe in the median line, there was a highly sensitive spot, pressure over which occasioned pain and a feeling of nausea. All four were tall, sallow women, somewhat thin and nervous. All four suffered with most obstinate constipation. Three complained that the desire was present, but there seemed to be a lack of power in the lower part of the bowel toward the anus to empty itself. These three resorted to injections, which often gave them uterine pain and which did not serve to empty the intestine satisfactorily. A natural passage gave them great pain in the region of the utero-sacral ligaments, both because of the straining and because, too, of the hard consistency of the feces. These three had chronic metritis, and during the menstrual periods especially they were often quite unable to digest even milk. All four menstruated scantily. In the fourth case,

there was the same enlarged liver, together with a catarrhal condition of the gall-ducts.

I am not able to explain at all satisfactorily to myself, much less to the acute readers of the *JOURNAL*, what the relation is between the portal circulation and menstruation, but I do know this much: just as soon as the area of hepatic dulness diminished to normal, co-incidentally with the softening of the liver and with the vanishing of the tender spot, the menstruation became much better and more as a normal flux should be, despite the pathological condition of the uterus. With the establishment of the normal action of the gall-ducts as scavengers, the constipation disappeared, unless it depended:

1st. Upon atony of the lower bowel.

2d. A lack of proper peristalsis of the intestinal tract, due to pernicious habit.

3d. To the mechanical cause of a uterus displaced backward.

One case, in which there was a spasmodic contraction of the gall-duct, a genuine reflected neurosis, recovered her former complexion and her health as well after a course at Karlsbad and Franzensbad, together with the adjustment of a properly fitted uterine support. The obstinate constipation is the chief obstacle. Drugs are abominable, for they destroy the tone of the stomach and engender a condition worse than the one for which they are administered. It is the constipation, the constant straining and forced effort to relieve the bowels that exaggerate the pelvic disorders and make more than distressing all of the dyspeptic symptoms.

It is this constipation, also, which is one of the hardest things to conquer. While agreeing with Jaffé that there is a train of gastric symptoms due to uterine causes, and while subscribing, in part, to his views that these will disappear when the complaining pelvic organ is relieved from suffering, I must yet protest against a wholesale acceptance of his teachings. First, because in cases of long standing the symptoms become so pronounced and stubborn that they assume prominence as distinctive pathological conditions which will not yield to pelvic therapeutics, and secondly, because the dyspepsia may be partly due to the hepatic derangement, to which also the constipation may be beholden. Both of these factors aggravate the chronic metritis, the old peri- or parametritis, and will not disappear coincidentally with the uterine complaint. For the

treatment of the increased area of hepatic dulness, with the catarrhal condition of the gall-duct and the consequent constipation, there can be nothing equal to the Karlsbad cure. This should be managed by an intelligent physician, because taken improperly the waters may originate a gastric catarrh. The moor baths can follow, and can be taken equally as well at Karlsbad as at Franzensbad or Kreuznach. In cases of chronic metritis, of adhesions, and exudates, this persistent poulticing is worth more than any drug in the market. No amount of special surgery gives a tithe of such satisfaction. The cases that come weekly to our offices with ever the same complaint, these women that suffer in their pelvic organs, in their stomach, liver, and bowels, can be rejuvenated by a systematic course at these springs. When the liver begins to appreciate the change, it is simply surprising how the scanty and painful menstruation will right itself. The long list of symptoms that go hand in hand with the remains of an old peri- and parametritis soon yield to the soothing influence of the mud bath, and, so far as my experience goes, they will yield to nothing else known to medicine or surgery. The constipation that is due to atony of the lower bowel—a want of muscular tone—is a very stubborn condition to overcome. When this habit has been formed by the unconscious action of the patient in checking a further descent of feces, fearing the pain that arises as they press against a retroverted and inflamed uterus, a better state of affairs sometimes obtains when the uterus has been replaced and its size reduced. If not, electricity must be used. For the constipation depending upon insufficient peristalsis, massage, with or without electricity, has subserved a most excellent purpose. The pain felt upon defecation around the utero-ovarian ligaments, which is sometimes almost unbearable, will almost surely yield to the moor baths. A great deal of the gastric derangement may be due to the condition of the gastric mucosa engendered by the daily use of aperients and cathartics, while all the pelvic aches and pains are intensified by rectal injections. If any physician who has had a sufficient experience in these cases will observe carefully the conditions of the other viscera, he will find, I am quite sure, in a large percentage of women complaining of reflex dyspepsia, and who have also a retroposed uterus, a chronic metritis, or the remains of an old inflammation, that these points to which I have

drawn attention are generally present. He will also find that he can ring all the changes known to pelvic therapeutics without lessening the area of hepatic dulness, without curing the tender spot, and without remedying the constipation or the irregular menstruation. But, on the contrary, if he first address himself to the portal circulation, his work will be crowned with the most satisfactory results. Menstruation will improve because the whole circulatory system has experienced a change for the better, and the bowels will respond more faithfully to simple rules of hygiene. Then he can address himself to the uterus, with a good hope of doing true and laudable service. If the case be recent and uncomplicated, if the gastric symptoms be pronounced and we have no valid reason to suspect any pathological process in any other viscus, then the dyspepsia may be relegated to the uterus, and it is this organ which should be attacked.

KARLSBAD, April 23d, 1887.

PUERPERAL FEVER AND ITS TREATMENT.

BY

JUNIUS C. HOAG, PH.M., M.D.,
Chicago.

DURING the sixty years from 1816 to 1875,¹ 363,624 Prussian women died in childbed. During the same period, 165,000 females succumbed to small-pox, and 170,000 fell victims to the ravages of cholera. In one case, these women were either in the full tide of youth or the maturity of womanhood; in the other, all ages from childhood to senility are reckoned and yet the combined malignity of those dread scourges, small-pox and cholera, did not equal in destructive power the dangers of childbed. To make the comparison still more startling, attention has been drawn to the fact that in one case we have to deal with diseases which are essentially epidemic, while in the other epidemic influences can scarcely be regarded at all.

¹ Max Boehr, *Zeitschrift für Geburtshülfe und Gynäcologie*, 1878.

Schultze,¹ taking the above figures as a basis for further computations and making various reductions which, in his opinion, suffice to bring the total far below the actual number, concludes that of the 1,600,000 women annually confined in the German Empire, 11,200 die during the lying-in period.

Breisky,² commenting on this subject, says that when one learns from the statistics which were collected by the Berlin Puerperal Fever Commission for the Prussian States in the year 1878, that the number of deaths in the lying-in period (depending for the most part on puerperal fever) amounts to 10,000 per annum, and considers that the relations are probably no better in the other European states, one is forced to the conviction, that in comparison with its frightful mortality, the mortality from so-called hospital epidemics almost disappears from sight; and one reaches the conclusion that in no other department are there such numerous fatalities in a disease which is partly avoidable.

Some years previous to these investigations, Matthews Duncan,³ who studied the same subject from the standpoint of both hospital and private practice, concluded that "not fewer than 1 in 120 women delivered at or near the full time dies within the four weeks of childbed." In his own private practice he had a mortality of 1 in 105; which figures compare most favorably with those of the other eminent British obstetricians, taken from the same period.

Some authorities in these latter days go so far as to maintain that, in every case of puerperal fever, the attending physician or midwife is responsible, by reason of sins of omission or commission, for the entrance into the vagina of the infecting agent which produces the disease. Be this as it may, it is certainly true that a revolution of greatest import has taken place in obstetrical practice. The cause of puerperal fever has been practically demonstrated, and this demonstration of a hitherto mooted problem has naturally led to various changes in the therapeutics of the subject.

¹ "Vortrag in der General-Versammlung des allgem. ärztlichen Vereins," 1884.

² "Ueber die Intrauterin Localbehandlung des Puerperalfiebers," Prag, 1880.

³ Matthews Duncan, "Mortality of Childbed and Maternity Hospitals," 1870.

The term puerperal fever will be used, for the purposes of this article, to cover all those severer and more dangerous manifestations of disease which are ordinarily associated with the lying-in period.

In reviewing the history of puerperal fever, it will scarcely be necessary to revert to a period more remote than that which was distinguished by the discoveries and teachings of Semmelweiss, who electrified the medical world by the novelty of his assertions with regard to etiology and treatment of this disease.

When, in 1846, Semmelweiss began his active career as assistant in the Lying-in Hospital of Vienna, the first great problem which was offered to his thoughtful mind for solution was the means whereby the mortality among his patients might be lessened; for at this period the most frightful fatalities prevailed in many of the large European hospitals, including the one in Vienna, a loss of from eight to ten per cent of the patients being by no means unusual. From the foundation of the Vienna Hospital in 1784 to the year 1822, the total number of lying-in patients amounted to 71,395, with an average annual mortality of 1.25%; while during 25 years it was even less than 1%. After the addition of a school of anatomy, the mortality increased to a marked degree, for we find a mortality of 5.3% with 23,059 patients. Later still the obstetrical patients were equally divided between two clinics, each of which was under a separate and distinct management. In one of these, called the first clinic, the medical students of the institution were afforded opportunities for study, while in the other, called the second clinic, students were not admitted, but the clinical advantages were used for the training of midwives.

It soon became apparent that there was a great discrepancy in the mortality statistics of these two clinics, for while in the first clinic a mortality of 9.92% was observed among 20,042 patients, in the case of the second clinic 3.38% represented the mortality among 17,791. A similar difference of statistics was maintained for some years, and the bad results in the first clinic became so notorious that many patients refused to be assigned to it at all. Why, then, was there such a marked difference in the results? What influences were at work to render the first clinic the veritable pest-house it was? This was the problem to which Semmelweiss bent all the energy of his mind for a satisfactory solution. The task was a difficult one, for

the greatest possible variety of opinions prevailed with regard to the etiology of the disease in question.

It is not easy to formulate these various views, but in general it was held that there were two principal groups of causes in the production of puerperal fever; one comprising influences external to the patient, while the other concerned special conditions of the patient's organism during the periods of gestation and confinement. As external influences, those of atmospheric, cosmic, and telluric nature were included, to cover which the expression *genius epidemicus* was often employed. Some considered merely the influence of changes in temperature, while others thought that, as the result of such changes, a deadly miasm was engendered and diffused through the atmosphere. The *genius epidemicus* could spread over great districts or might be confined to the limits of a single community, but the miasm was supposed to attach itself to a single building only, especially a building where pregnant and lying-in women were congregated. Others still held that under certain conditions of intensity of development, a contagion was brought about. This idea of a contagion involved the further conception of a specific virus which could originate only in a diseased organism, from which, however, the same disease could be developed in another person by contact.

With regard to the second group of causes, some laid great stress on the modification of the blood as produced by pregnancy, and the organic changes peculiar to the lying-in period, while others had in view certain alterations in the solid tissues, especially those of the sexual system. Some regarded the disease as a dyscrasia and held that the blood underwent certain characteristic changes with increase in the quantity of fibrin, resulting in the formation of exudates on the inner and outer surfaces of the uterus or in a putrid dyscrasia of the blood when the process had advanced still farther. According to the theory, this condition could also be the direct result of the miasm. It was further supposed that the changes wrought in the sexual organs by the influences attending pregnancy and the lying-in period produced in these organs a *locus minoris resistentiæ* as evidenced by the frequent occurrence of exudates produced by the altered blood or by the changes produced by the miasm, which after inspiration was supposed to be present in the circulation. Again, it was universally held that the

alterations peculiar to puerperal fever could be idiopathically developed through the predisposing influence of wounds, imperfect contraction of the uterus, cold, errors of diet, etc., and that in these cases the alterations of the blood peculiar to the disease were of a secondary nature.

These, then, were the prevailing views of the period referred to, modified and varied as they were, by the different authors, according as each one laid more stress on this or that particular etiological factor or pathological finding. But two other points may also be considered. In Germany and France, the contagiousness of puerperal fever was contested, while in England it was very generally admitted. Numerous observations had resulted in the conviction that scarlet fever, measles, small-pox, erysipelas, and even typhus and typhoid fevers stood in intimate relation to puerperal fever. The poison of these diseases, it was believed, could give rise to puerperal fever in a lying-in woman; for it was thought that the specific virus of the diseases in question was sufficient to excite other than the ordinary manifestations under usual circumstances, because of the peculiar condition of the blood during the lying-in period. A further conclusion was reached by some writers, namely, that puerperal fever was the result of a specific virus which was identified by them as being also that of erysipelas. For the rest the most manifold and various views with regard to the genesis of puerperal fever prevailed even in Great Britain.

Before the time of Semmelweiss, the idea of the identity of puerperal fever with pyemia was very far from the minds of the obstetricians, puerperal fever being regarded as something essentially inherent in the relations presented by the puerperal woman. No doubt, too, the convenient but inappropriate term "puerperal fever" was in itself a fruitful source of misguidance and error, for, as Matthews Duncan observes, "there is nothing essentially puerperal known in it, nor is there anything of the nature of a fever, as that term is generally understood."¹ It is certainly very strange that two pathological processes representing so much in common should not have been compared with each other, and all the more so since the theories of the two diseases, although apparently originating in an independent manner, so nearly coincided with each other.

¹ Matthews Duncan. "Mechanism of Natural and Morbid Parturition."

In the case of pyemia, external poisons, general epidemic influences or hospital miasm, were regarded as the causes producing the alterations of the blood found in this disease. Nor was a parallel to the altered condition of the blood as a result of pregnancy and the lying-in condition wanting in the theory of pyemia, for the idea was entertained that certain conditions, such as dyscrasia, or anemia, could easily undergo modification sufficient to induce the full development of pyemia in a surgical patient whose wounds represented the necessary *locus minoris resistantie*. In the same way, again, as in the theory of puerperal fever, it was held that pathological processes could develop in an ordinary wound and produce pyemia, just as wounds, cold, and errors of diet were regarded as sufficient to excite, first, local inflammation, and then puerperal fever.

Such were the crude and conflicting views which prevailed when Semmelweiss set about a solution of the difficulty. They were rather the views of philosophers than of clinical and experimental investigators.

The clinical observations, experiments, and discoveries of Semmelweiss, together with their logical deductions, are admirably set forth in the somewhat voluminous treatise published by him in the year 1861.¹ The most important features of his discoveries, however, were made known during the comparatively brief period in which he officiated as clinical assistant in the Vienna Lying-in Hospital, which was comprised between June, 1846, and March, 1849. He himself wrote very little previous to the publication of the volume referred to, but finding, after a lapse of fourteen years, that his work had not borne the fruits of a reasonable expectation, he rapidly prepared what was at first intended as a short monograph, but which now presents a treatise of more than five hundred pages. In this work there are many pages of bitter denunciation directed against the opposers of his views, but there are also many complete chapters devoted to the logical deductions of correct observations of the keenest sort. These pages are filled with truths which shine all the brighter for having been tried in the furnace of scientific research for a whole generation. Let us now observe what these truths are, and inquire by what process of thought they were discovered.

¹ Ignaz Philip Semmelweiss, "Die Etiologie, der Begriff und die Prophylaxis des Kindbettfiebers."

The first fact noticed was that the mortality in his own clinic was nearly three times as great as in the other clinic, although the conditions were apparently the same. He was entirely unable to account for this on the basis of any one or all of the etiological views which had up to this time been advanced. Neither epidemic or endemic influences were sufficient to account for it; but many pointed facts began to impress themselves on the investigator's mind. In the first place, having an extremely large number of patients under daily observation, he noticed that the women in whom the first stage of labor was unusually protracted were especially liable to develop puerperal fever, and that their children were very apt to die.

Again, in Vienna many women give birth to their children while on the way to the hospital. These cases are termed street births, and their frequency is due to the fact that the State is prepared to receive into the foundlings' hospital all children which are born in the lying-in hospital and undertakes to care for them gratis. If, however, a woman gives birth to a child while on the way to the hospital, the same opportunity is accorded her. Many women take advantage of this privilege and going to some midwife's house are there confined, and afterwards arrange to be conveyed to the hospital as expeditiously as possible, and as the detection of this subterfuge is not always an easy matter, the number of so-called street births is a very considerable one. Semmelweiss observed that in these cases the women were singularly exempt from puerperal fever. In the third place, he found that after premature deliveries there was also a singular immunity from fever. A fourth observation was that an entire row of women in the large ward to which the patients are conducted as soon as labor sets in, was often affected with puerperal fever, not one escaping.

A fifth observation was to the effect that a temporary improvement of mortality was noticed whenever there was a falling off in the number of students who frequented the ward for the purpose of examining the patients. But the most important step in advance was taken as the result of a singular occurrence which took place in the spring of 1847. On the 20th of March, in this year, Semmelweiss returned to Vienna to resume his duties as assistant; but scarcely had he reached the hospital when the news of the death of Professor Kolletschka was made known to him as a friend and admirer. He then learned that

this professor died of pyemia as the result of a dissection wound. The autopsy revealed lymphangitis, phlebitis, pleuritis, pericarditis, peritonitis, meningitis, and a metastatic abscess of one eye. The effect of this news may well be related in Semmelweiss' own words. "The conviction was at once irresistibly forced upon my mind that the disease which proved fatal to Kolletschka is identical with that which has caused the death of so many hundred women under my observation."

Having made this most important discovery, Semmelweiss at once took measures to lessen the mortality among his puerperal patients, by employing chemical agents to destroy the cadaveric virus on the hands of those who examined the patients. For this purpose *chlorina liquida* was introduced about the middle of May, 1847. Later on, chloride of lime was substituted as being less expensive. With a strong solution of this kind every one who examined the patients was required to carefully wash his hands, and the most brilliant results were soon produced, as is exemplified by a comparative review of the statistics. In the year 1848, the mortality in the first clinic was only 1.27 per cent in comparison with 1.33 per cent in the second. From this time on, the results produced by the introduction of chlorine as a disinfectant proved the value of this therapeutical measure; for although the patients in the first clinic were exposed to especial dangers, still the statistics maintained a most favorable comparison with those of the second clinic.

In March, 1849, Semmelweiss' term of service was completed and he was succeeded by Carl Braun as assistant. Previous to this change, however, he made other important observations to which attention may be profitably drawn. In 1847, a patient suffering from medullary cancer of the uterus was admitted to the clinic. This patient was examined in turn by Semmelweiss and his pupils, who, after washing their hands with soap and water only, proceeded to examine the other patients in the ward. The result was a frightful mortality, for of the twelve patients who were confined with the cancerous woman, eleven died of puerperal fever! From such facts as these Semmelweiss deduced the further proposition that not only cadaveric poison, but every foul irritant proceeding from living organisms is sufficient to cause puerperal fever.

That the direct contact of a finger contaminated with such poisons is not necessary for the production of puerperal fever,

seemed to Semmelweiss to be proved by other occurrences which took place at about the same time, one of which was as follows. A woman with caries of the left knee was admitted. The genitals were entirely healthy, so that Semmelweiss thought it impossible for the finger of the examiner to come in contact with the poisonous secretions of the wound. However this may have been, in two months nineteen deaths occurred which were ascribed to the poisonous exhalations from the carious joint making their way through the medium of the atmosphere to the neighboring patients.

Semmelweiss now described the virus which he had demonstrated to be the cause of puerperal fever as "decomposed animal material" (*zersetzte thierisch-organische Stoff*), a term which can scarcely be improved on to-day. Other and earlier workers, no doubt, had hinted at or even pointed out the connection between decomposed organic matter of animal origin and puerperal fever. Thus Blackman, of Edinburgh, in 1845, wrote a paper to show how such matter might find lodgment under the physician's finger nails and thus to be conveyed to the patients with disastrous results; but to Semmelweiss is undoubtedly due the credit of setting before the world a logical demonstration of the etiology of puerperal fever, so complete in its details and so free from confusion and error that we may still at this day admit the complete truth of nearly all his propositions. Semmelweiss' views take rank with the most advanced ground held by present authorities, for he was the first to ascribe to puerperal fever and pyemia a sole tangible cause—putrefactive matter; while he disregarded altogether such vague generalities as those included in epidemic, cosmic, and telluric influences, and divested the disease of the idea of a contagion in the ordinary acceptation of the term.

The discovery was hailed with delight in Vienna, where it was thought to inaugurate a new era in obstetrical practice. It was speedily made known in England chiefly through an excellent review of Semmelweiss' achievement by Dr. Routh,¹ of London, who was a pupil of the discoverer. Simpson, of Edinburgh, was fully acquainted with Semmelweiss' work, which he attempted to belittle by maintaining that it contained no new ideas. He asserted that it quite accorded with the English

¹ Dr. C. H. F. Routh, "Causes of the Endemic Puerperal Fever of Vienna." "Medico-Chirurgical Transactions," Vol. xxxii.

doctrine of a specific contagium which is by no means the case; Yet later on, he published two papers in which he expressed himself almost in the same terms with Semmelweiss and even placed puerperal fever in the same category with pyemia or surgical fever.

As evidence that sufficient confusion still prevails with regard to these matters in England, one need only refer to comparatively recent expressions. In the Transactions of the Obstetrical Society of London, for instance, one may find just such antiquated views set forth as everywhere prevailed thirty or forty years ago. As examples, mental conditions, feelings of shame and colds are discussed as important factors in the production of puerperal fever. The body of the patient is spoken of as being loaded with matters which must be eliminated, else the accession of fever from any cause may be sufficient to produce an attack of puerperal fever. Or, puerperal fever may be spontaneously developed if the effete tissues which undergo retrogressive metamorphosis are not speedily eliminated from the system.

The first publicity given to Semmelweiss' discovery was through the medium of the Journal of the Vienna Society of Physicians, whose editor, Hebra, declared that it deserved to rank with that of Jenner. The discoverer himself and his followers were greatly disappointed that their opinions were not at once adopted by the majority of the profession, and it certainly is most remarkable that they were not more promptly accepted; but to say the least they had a most important bearing on modern obstetrical views and practices, and in this way exerted a beneficent effect throughout the world. In Semmelweiss' own time, a bitter conflict was waged over this question in which, although the supporters of the new doctrine numbered many of the most brilliant men of the period, still the opposers outnumbered them by far.

The triumph of Semmelweiss' work did not come until after his death. Others reaped the reward which his honest efforts had entitled him to. Lister's name was praised in every land. Semmelweiss was despised even by his own countrymen. But to his dying day he never yielded one inch of the advanced position which he had taken. Opposition only served to strengthen his convictions and when in his later years he saw nearly the entire medical world arrayed against him, he defied them all. There can be little doubt that the storm which was raised

against him by his various publications was the indirect cause of his death. Not patient to brook opposition, perfectly convinced of the truth and importance of his discovery, he brooded over his disappointment until he fell a victim to melancholia. His discovery exerted no influence upon surgery, but singularly enough Lister's work in surgery produced a revolutionary effect on obstetrics. If Semmelweiss' teachings had been accepted at the time when they were first promulgated, they would have constituted an epoch in the progress of medicine, and surgery would, no doubt, have come in for its share of benefit. Of the two men, Semmelweiss and Lister, the former was by far the more original investigator, for he worked out his problems unaided, while the latter found the basis of his teachings in the work of the French scientists.

Under the impulse of Lister's work, a new era dawned upon obstetrics. Vague generalities were no longer needed as a cloak to cover doubts, but precision began to take the place of hypothesis, and as puerperal fever became better understood, it was robbed of half its terrors.

It is only a few years since the propriety of special lying-in hospitals on anything like a large scale was seriously doubted. In Prague, the Austrian Government consulted the leading medical authorities of Austria and Germany before venturing to enlarge their accommodations; indeed, in various cities it became necessary from time to time to vacate these hospitals altogether—a procedure which has been adopted several times in the case of the British Lying-in Hospital of London. In this institution it was even deemed necessary to make Prof. Lister one of the consulting physicians; but to-day, thanks to the practical and complete system of prophylaxis inaugurated, the statistics of morality compare most favorably with those of private practice. Prof. Schultze asserts that the conditions of puerperal fever have been so fully mastered that even in lying-in hospitals, where clinical instruction is given to large numbers of students, better results are often secured than in private practice, notwithstanding the many unfavorable factors which necessarily help to swell the statistics of mortality.

With proper precautions, the most difficult obstetrical operations can now be performed without being followed by any untoward symptom during the lying-in period, whereas formerly such operations were as a rule succeeded by surgical

fevers more or less intense in degree. On the other hand, after an entirely normal labor, the patient may succumb to puerperal fever if access has been given to the deadly agent of infection.

There can be no doubt that in micro-organisms we have found the proximate cause of this disease. These organisms, finding their way into the body through wounds, produce by their marvellous energy of growth the well-known symptoms of the disease which has long been known as puerperal fever, but which in reality is pyemia. The germs find portals of entrance in the wounds of the cervix, of the endometrium, of the vagina, or of the introitus, and these solutions of continuity are always present even after the easiest labor. They may be conveyed to the patient on the hands of the physician or nurse, on the instruments, or perhaps through the direct medium of the atmosphere. The most frequent source of conveyance is, no doubt, the hands. The prophylaxis of puerperal fever, then, consists in preventing contact of these germs with the wounded tissues, or in attacking them after contact by means of agents which either entirely destroy them, or so alter their character that they are unable to overcome the vitality of the cells in the tissue upon which they have effected lodgment.

Whether there is a specific germ of puerperal fever is still a mooted question, for hitherto all attempts to differentiate and definitely characterize such a germ have failed. Pasteur was at work in this direction in 1880, but his results were not satisfactory. In 1884, Fritsch¹ wrote that one of his assistants had been at work in Cohn's Institute for a year, but that all results of investigation were only the beginning of new and still more difficult problems. We are, however, in position to make some pretty definite statements.

There are certain germs which are characterized by the fact that they develop in the spaces of the connective tissue, where they cause severe local disturbances, resulting in the death of the tissues and the resorption of deleterious material, which in turn calls forth constitutional symptoms of grave import. To this class belongs the germ of pyemia and probably that of puerperal fever as well. In cases of puerperal fever occurring in hospital practice, the lochia often becomes so extremely infectious that pregnant women, gynecological patients who

¹ H. Fritsch, "Pathologie und Therapie des Wochenbetts," 1884.

have undergone operations, and even the physicians are exposed to the dangers of sepsis. Not infrequently it happens that a physician infects an obstetrical patient from an unhealthy wound or from a furuncle, and puerperal fever results. Or an obstetrician becomes infected from a putrid lochial discharge and acquires septicemia.

Fritsch, in his excellent work on the "Pathology and Therapeutics of the Lying-in Period," to which the compiler is indebted for many of the facts represented in this paper, draws a graphic picture of an ordinary severe case of puerperal fever, showing the mode by which infection so often takes place. A hospital student or physician, for instance, examines a bad case of typhus fever with many abscesses and purulent infiltration of the cellular tissues, after which he washes his hands in a careless manner. Soon after he is called to attend a case of labor. He examines the patient frequently, and perhaps with unnecessary rudeness. Spontaneous delivery takes place in the morning. In the evening, the temperature is 101° . By the next morning, it has risen to 104° . The following evening it is 105.5° , with a pulse of 120. The temperature remains moderately high, while the pulse increases rapidly in frequency until it becomes a mere flutter. The tongue is heavily coated, the sensorium benumbed, the eyes sunken with a look of distress, the pupils are dilated, the cheeks glow, the abdomen is moderately distended, the legs are drawn up. On the following day, a moderate icterus appears with delirium. The patient sinks into the dull condition which characterizes typhus fever. One seeks in vain a local disease. The uterus is large and soft, but movable; the parametrium moderately sensitive, but with no appearance of swelling. The sensitiveness to pressure disappears, so that a vaginal examination is entirely unattended with pain. The uterine discharges are not fetid. On the fourth or fifth day, the vagina is perhaps entirely free from any evidence of discharge, there is not a trace of lochial or decomposing discharge of any kind. On the fifth or sixth day, the patient dies with scarcely a struggle, death being due to non-localized puerperal fever or, in other words, to septicemia.

Septic poisoning does not occur as a primary disease. Real sepsis, that is to say, blood poisoning from septic material dissolved in the blood, is always a secondary matter. Septic poison is the product of the bacteria which have developed in a

soil favorable to their increase. There is, indeed, in putrid poison a chemical product which is capable of calling forth the appearances of putrid infection, but the effect of this poison is proportionate merely to its quantity. It has been experimentally shown that, in the case of the rabbit, it is necessary to inject one per mil of the animal's weight with such a poison in order to produce septic poisoning. To produce the same result in man, would require the introduction of more than sixty grammes of the material; but in the case of real septic infection, there can be no question of such a quantity. In the latter case, the patient is first infected by the germ, which then develops in such a manner as to destroy life after a fermentative action as contradistinguished from a toxic action.

Matthews Duncan,¹ who adopts this view (and who does not believe in the intimate relationship between scarlet fever and puerperal fever, as advocated by Barnes and many others), applies the term *sapremia* (*σαπρος* putrid, *αἷμα* blood) to those cases in which there is poisoning from the absorption of the mere chemical products of putrefaction. He regards *sapremia* as a separate entity, although it may be, as he says, associated with those grave forms of disease, *septicemia* and *pyemia*. He also points out the error of describing *pyemia* and *septicemia* as diseases of putrefaction; for putridity of the discharges is by no means an essential part of these diseases. "The organisms which cause *septicemia* and *pyemia* take no part in putrefaction, but those organisms which do, whether the bacterium termo or others in addition, may pass into the blood with the putrid fluids to produce *sapremia*, but they do not survive therein. In this case, the poison does not multiply like a ferment, but is rapidly eliminated, and if the supply of new material is stopped, the symptoms of its presence quickly disappear."

If the germ is admitted to be the great etiological factor in the causation of puerperal diseases, it becomes a matter of the greatest interest and importance to determine the reason for the various characters of these diseases. Why do the so-called epidemics of puerperal fever differ so greatly in point of severity? Why are the germs especially dangerous in the puerperal period? Why does puerperal fever itself vary so much in its man-

¹ J. Matthews Duncan, "On the Treatment of Puerperal Fever," London Lancet, 1880.

ifestations? If germs are the source of these diseases, and if germs are everywhere present, why is not puerperal fever still more prevalent?

Unfortunately, the study of bacteriology is not sufficiently advanced at the present day to afford entirely satisfactory answers to all these questions, and indeed there is much controversy with regard to these matters. According to some writers, there is a pathogenetic and a non-pathogenetic germ of puerperal fever. To assert the least, this is a convenient explanation of some of the phenomena observed in puerperal cases. There is certainly much variation in the virulence of puerperal fever, but it does not follow that there must be a special germ to correspond with each degree of variation in the severity of the disease.

Koch has admitted that dangerous germs may lose a large part of their activity and become comparatively inert, and what is possible in a descending scale is also possible in an ascending one. As these germs represent forms of plant life, there is certainly nothing strange in the idea that favorable conditions of culture should increase their power of growth and multiplication, and this is no doubt true. In the discussion of antiseptic spray it was proved that germs which were otherwise active and capable of producing disease became inactive and harmless when dried out by suspension in the atmosphere. Billroth's view is that a germ may receive a definite character from the soil in which it grows—in other words, is susceptible to a process of acclimatization. A similar idea is expressed by Mikulicz when he says that the variations observed in the phenomena of disease produced by germ life depend upon the varying energy of the germs themselves. The so-called pathogenetic germ, then, may be simply the non-pathogenetic germ which has acquired through development a more powerful vital energy, capable of calling forth in the disease produced the greatest virulence; while the non-pathogenetic germ is the one which has lost its energy through exsiccation, degeneration, or the action of disinfecting agents.

The non-pathogenetic germs are the bacteria of putridity. The pathogenetic germs are those which have acquired a power of rapid development which enables them to multiply with marvellous rapidity in the tissues of the organism in which they have effected an entrance, and especially in the subvital tissues.

In the puerperal woman, the lochial secretions and the detritus of the uterus afford the best possible nidus for the development of bacteria.

Germs multiply most rapidly in subvital tissues. It is a well-known clinical fact that sepsis is most apt to ensue after difficult operations in which considerable blood has been lost, for the enfeebled system is not able to render innocuous the germs which are always present in greater or less degree. In general surgery, gangrene easily attacks parts which have been bruised, or which are edematous, and then quickly extends to regions previously healthy.

Similar conditions prevail in the lying-in period. After the expulsion of the child, the uterus contracts strongly, and the previously distended vessels are emptied. The condition of hypernutrition no longer exists. Fatty degeneration begins, and the tissues of the organ become, to a certain extent, subvital. Furthermore, the inner walls of the uterus are divested of their usual covering, fragments of membranes and placental tissue are present, and the cervix presents fissures. If, now, active germs reach the uterus when it is in this condition, they develop with great rapidity, for every requisite for rapid development is at hand. During the life of the patient, it may be difficult or impossible to find germs in the blood, yet a few hours after death the blood-vessels and tissues are crowded with them. The next phenomenon observed is edema of the uterus, which is always present in septic cases, the organ being greatly increased in size and so soft that the distended convolutions of the intestines indent its surface.

The most dangerous pathological processes may be in active progress in the uterus and the surrounding organs, and still there may be no fetid lochial discharge present, and no tangible evidence of inflammation in the peritoneum or parametrium, yet the case is not one of intoxication, but of infection. In these cases, there is no circumscribed infiltration to be found, but a diffused infiltration extending into the subperitoneal tissue.

The active or pathogenetic germs, if this term be adopted, are conveyed by the hands of the attendant, or by means of instruments, to the wounded surface of the genital tract. Having once effected an entrance to the organism, they become dangerous in proportion to their previous activity and the character

of the soil in which they are implanted. If promptly attacked with a suitable disinfecting agent, their multiplication may be arrested and the usual effects of such increase may be prevented; but if the disease has obtained headway and has been advancing for several days, neither medicines nor topical measures of disinfection will be of avail; for by this time the process has developed to such an extent that the germs have penetrated to tissues beyond the reach of injected fluids, and a superficial disinfection of the tissues is wholly useless.

(To be continued.)

CORRESPONDENCE.

INCOMPLETE ABORTION OF TWIN PREGNANCY.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—I beg the indulgence of a little space to relate a case similar, in part, to that given in the May number of your JOURNAL by Dr. Warren.

Case. Mary K., VIIIpara. Last pregnancy was aborted in the third month. Twins. Was called to see her on account of something hanging out of vagina. Found her in the third or fourth month of pregnancy. Examination per vaginam revealed a loop of the funis tightly gripped by the rigid os uteri. She gave a history of severe lifting a day or two before. Explained the case and diagnosed an abortion of the fetus. In a few days was called to see her. The fetus had been extruded without pain or hemorrhage. She felt comfortable physically, but was in great mental distress about the retention of the placenta. On examination, I could pass my finger through the os internum, but could not feel the placenta. Instead, I felt the sac of a second fetus. The placenta of the discharged fetus seemed to be beyond fetus No. 1. She had no pain or hemorrhage, and I determined not to interfere. For two days her condition was unchanged. At that time the woman's family became alarmed, and a consultation was called. It was decided to clean out the uterine cavity. The gentleman called could not satisfy himself of the existence of the second fetus. Accordingly, the membranes were ruptured and the fetus discharged. The placenta was felt

at the fundus, and neither before, during, nor upon examination after the removal, could any trace of two placentas be found.

In thinking over this case, the conclusion is forced upon me that the life of the second child was sacrificed. I have never since been able to see why fetus No. 2 should not have gone on to full term with care on the part of the mother. The cause of the death of fetus No. 1 was unique, and so long as the second fetal sac was intact, there was no cause to suspect an abortion. I cannot see that fetus No. 2 would have suffered any risk incidental to the extrusion of fetus No. 1, and the retention of No. 1's placenta. In my mind, it was a case in which meddlesome midwifery was most emphatically bad, and it has always been a source of regret to me that I allowed my better judgment to be overruled.

Yours very truly,

V. M. REICHARD.

FAIRPLAY, MD.

A NEW RETROVERSION STEM PESSARY.¹

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

ONLY those who attempt something new in the invention of pessaries realize the great amount of thought that has been expended in this direction. For a time one may be strong in the belief that his device is essentially original, but in all probability a more thorough investigation will discover that the idea had been evolved before, perhaps repeatedly.

We have an apt illustration of this in the presentation of "a new stem pessary" to the New York Obstetrical Society by Dr. Harry M. Sims.

The doctor explained that he conceived the idea about a year and a half previous to its presentation, but delayed publication until its merits were more carefully tested.

The assertion is hardly necessary that not for a moment do I impute to the doctor any intended infringement, or the slightest knowledge of the pre-existence of an instrument closely resembling, in all essentials, the one he has advocated. The idea is really a very natural one, and it would not surprise me to learn that it had long ago been familiar to some other mind.

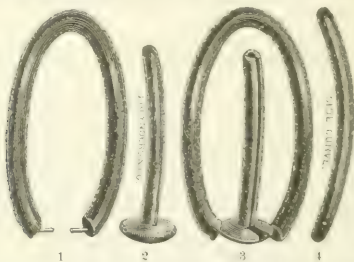
To the best of my knowledge, however, the design originated

¹ AMERICAN JOURNAL OF OBSTETRICS, April, 1886, p. 600. The appearance of this letter has been delayed by the protracted illness of the writer.

with me nearly five years since. At that time I was treating a young unmarried lady suffering from a retroflexed undeveloped uterus. No pessary with which I was acquainted would meet the requirements. On account of inability of patient to remain in my vicinity, I was obliged to devise supplementary measures to take the place of the stem and tampons.

The cervix was very small and soft, vagina short, and the patient extremely sensitive and irritable. The presence of the stem was tolerated very well, however, but the difficulty was to find some means for retention, as it would immediately drop out before assuming the erect position, despite the most carefully adjusted vaginal pessary, over the distal end of which the uterus would then hook itself.

To meet the difficulty, I selected the smallest Hodge pessary, and after modifying its curves, had a piece cut out of one end



No. 1. Loop, open; 2. Stem, showing curve; 3. Stem and loop connected; 4. Side view of loop showing curve; cut from photograph reducing to three-fourths full size.

and two small silver pins fitted into the ends. Two holes, corresponding in size to these pins, were drilled in the button of the stem, and the two parts were then attached, producing an instrument closely resembling a buckle.

The first experiment promised well, but we were compelled to discard the first instrument on account of the loop being too long (a mistake which must be guarded against). The next instrument was made by John Reynders & Co., and is the one from which the cuts here presented were taken. Since then I have had a number made, varying in size according to the peculiar needs of different cases.

Before proceeding further, I wish it to be distinctly understood that my purpose in presenting this article is not to raise the question of priority of invention by any means, but rather to give to those who may venture to employ the instrument the benefit of

personal experience ; for I hold it incumbent upon every physician calling the favorable attention of the profession to any novel development possessing elements of danger, to forefend every possible evil which its use might entail, by clearly explaining the best methods of manipulation, together with all needful precautionary measures for the averting of harm.

Doubtless the silence of Dr. Sims regarding the objectionable characteristics of this instrument can be explained on the ground that the question of stem pessaries is one too familiar with the profession to need further discussion. It is not, however, the reiteration of familiar precepts that is the purpose of this writing, but the publication of such practical hints as may stand between the inexperienced and the safety of patients. While this pessary, rightly managed, will prove quite safe and efficient, it is really a dangerous instrument in the hands of the venturesome or inexperienced. The kind of cases for which it is adapted has already been indicated. Treatment of the case should seldom be inaugurated by the use of this pessary.

The first step is the removal of all undue tenderness, inflammation, or adhesions, by the proper use of medicated tampons and hot douching. The frequent use of the sound should be carefully avoided. When the uterus has been properly prepared, thorough divulsion is performed, the patient always under an anesthetic, the divulsion performed slowly and fully. The observance of antiseptic precautions is of the utmost importance.

After divulsion, a large vulcanite stem, three-eighths of an inch in diameter, is inserted and retained by laying a broad, flat tampon smoothly along the vault of the vagina and enveloping the cervix. This tampon should be saturated with a mixture of glycerin, alum, and carbolic acid. The stem and glycerole must each be armed with a sufficiently strong thread for their removal. The plug should also have a deep groove along one side to secure free drainage.

The patient remains perfectly quiet and warm in bed for several days, even when there is not the slightest pain experienced.

In twenty-four hours the tampon and plug are removed, a hot four-quart douche of one in two thousand corrosive mercury solution given, and a fresh tampon adjusted.

This treatment is pursued for a week or two, providing no irritation is excited ; should this be the case, of course all intrauterine measures are discontinued and held in abeyance.

After this manner of treatment, the womb becomes inured to the more constant presence of the stem ; more than this, the di-

vulsion and subsequent treatment have wrought a change in the cervical tissues, especially at the point of flexion where the circulation has previously been impaired, and the textures wasted.

After ten or fourteen days of this preliminary treatment, providing all has gone favorably, the tampon is substituted by the loop.

The stem that has been used may be retained or one a trifle smaller selected.

It is well to remark here that a large stem is not only more efficient in securing the desired result, but is safer and less liable to irritate; of course, divulsion always precedes its insertion. The stem should be fully one-fourth of an inch shorter than the depth of the canal, and if the cervical tissues be soft, a half inch should be allowed. The loop must not exceed in length the distance from the introitus and the cervix, for we must bear in mind that its distal end does not pass into Douglas' pouch, consequently two and a half inches is an average length. Its width need not exceed an inch, and it should have but one curve, which must correspond with the crest of the vaginal floor.

With all due deference to Dr. Sims' teaching, I must take exception to the statement that the loop takes its approximal bearings upon the symphysis. The pessary moulded after this idea is sure to prove a failure. Our object is to preserve as fully as may be the freedom of movement and unrestricted elasticity of uterus and vagina. It is evident that a pessary that impinges its lower extremity against an unyielding substance must inevitably convert the normally resilient movements of the womb into so many painful shocks.

A loop pessary properly adjusted should conform to the shape of the vaginal canal, and should not hold apart, but simply lie flat between its coapted walls. The stress brought to bear upon this loop is quite insignificant, hence no strong retaining factor need be sought.

During adjustment, the patient occupies the left semi-prone position. The tip of the left forefinger finds the os (the uterus being left undisturbed in the retroflexed state), the point of the stem, which is impaled upon a steel stylet, traverses the dorsum of the finger and so enters the os. When the stem has entered the uterus as far as the point of flexure, the finger is withdrawn and passed into the rectum where it comes in immediate contact with the fundus which it pushes up, and as the womb is thus straightened, the stem advances into the canal. This manœuvre accomplished, the *left* hand takes charge of the stylet, the tip of

The right index finger finds the button of the stem and ascertains if it be in close approximation over the mouth of the cervix. Then, while steady counter-pressure is made with the finger, the stylet is withdrawn, and as the stem parts from the stylet, the button is carried back into the hollow of the sacrum; the loop following takes its position at right angles with the stem and lies flat over the crest of the vaginal floor. It is understood, of course, that the fundus rises and advances as the cervix is carried back into the hollow of the sacrum. This manner of adjustment I have pursued from the first, and accordingly greatly prefer it to the one described by Dr. Sims, in which the speculum and tenaculum are employed. The use of these extra instruments necessitates an assistant, not always available.

The instrument adjusted, perfect rest in bed is enjoined for a day at least. Fatiguing or violent bodily exercise should be forbidden, and the patient should lie prone for at least half an hour two or three times during the day.

The length of time that the instrument can be worn is determined by the tolerance evinced. I have known it to be worn constantly for six weeks and then disturbed solely for the purpose of cleaning, but it is prudent to remove it as often as once in ten days, allowing two or three days of rest.

While wearing this instrument, and especially during the intervals in which it is laid aside, the patient should frequently assume the knee-chest posture. This is a highly important consideration, and upon its faithful observance hinges success or failure. While lying upon the back, the pelvis is the lowest part of the body, hence the blood gravitates to the pelvic structures and congestion is favored. On the other hand, the elevation of this portion of the body insures disengagement and normal posturing of pelvic organs.

This matter of posturing which we can only touch on in passing is of vital significance, and merits our best consideration.

It is hardly necessary to explain that the use of this pessary should be discarded gradually, the intervals of discontinuance growing longer, and the periods of wearing shorter, until its complete abandonment.

Recapitulation of Important Considerations in the use of this Instrument.

Careful preparation of patient.

Inurement of uterus to presence of stem by divulsion; complete rest and short periods of wearing the stem.

Faithful use of antiseptic measures at all times.

Prompt removal of stem on inception of pain.

Every stem should have a drainage groove.

A large stem is preferable to a smaller one.

Avoidance of an unnecessarily large vaginal portion.

Finally, it is of the utmost importance that frequent brief rests be taken reclining in the semi-prone position (of course there must be positively no constrictions from clothing) and at least ten minutes at noon and night spent in knee-chest posture.

S. J. DONALDSON, M.D.

NEW YORK.

OBITUARY.

ALFRED MEADOWS, M.D.

FIFTY-FIVE years ago, at Ipswich, England, Alfred Meadows was born. Showing early in life an aptitude for the science of medicine, he was apprenticed to a Mr. Ellison, of that town. When twenty-one, he matriculated at the University of London. Three years later, he became a member of the College of Surgeons and a licentiate in midwifery. In 1857, he became a Bachelor, and in 1858, Doctor of Medicine of the University of London. In this same year, in the very beginning of his practice, he was appointed physician accoucheur to the St. George's and St. James' Dispensary. Later, he was connected with King's College Hospital, the Hospital for Women, and the General Lying-in Hospital. At St. Mary's Hospital, where in 1871 he was given the position of physician accoucheur, he succeeded Dr. Tyler Smith as Lecturer on Midwifery and Diseases of Women and Children, holding these appointments until his death.

Of his literary works, the best known are his "Manual of Midwifery," and his translation of Bernutz and Goupil's "Clinical Memoirs on the Diseases of Women," this last being a most valuable work on inflammatory and other diseases of the pelvic peritoneum and connective tissue.

Celebrated as an obstetrician and holding many appointments, he was a member of many societies, both in England

and elsewhere. In 1884, at the founding of the British Gynecological Society, he was elected its first President.

Dr. Meadows was noted for his genial hospitality, and those of our countrymen who have had the pleasure of meeting him during their visits in London cannot but have brought home with them many most pleasant remembrances of his cordial reception and of his generous appreciation of the work and advances in medicine which have emanated from America.

Dr. Meadows' health had for some time been failing, though until a day before his death, on the morning of April 19th, he was able to attend to his large practice. Of his last illness no particulars have been received, save that on the evening of April 17th he was seized with severe abdominal pain, under the agony of which his strength rapidly gave way. His heart early showed signs of weakness and did not respond to treatment.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, May 17th, 1887.

The President, DR. PAUL F. MUNDÉ, in the Chair.

HYSTERECTOMY FOR FIBROIDS.

DR. J. N. FREEMAN presented a uterus and cystic ovaries which he had removed by abdominal section two months previously. The uterus contained multiple fibroids of sixteen years' growth, and the entire mass weighed from eight to nine pounds. He saw the patient for the first time in March of the present year, and she was then suffering from repeated chills and fever, and from symptoms due to the enlarged ovaries, which were wedged in the pelvis by the uterine tumor. Her family physician had tapped her twice, first in February and again in March, obtaining a semi-purulent fluid. The temperature before the operation ranged as high as 105°, but immediately after it sank below the normal. The patient eventually convalesced well. The operation was a very difficult one, owing to the numerous adhesions. He had made an incision to the extent of twelve inches, and he had removed the mass entire without emptying the ovaries. He had tied the broad ligaments, but even, as had happened in the somewhat similar case recorded by Dr. Dawson at the last meeting, the liga-

tures were found relaxed after amputation of the uterus. He had compressed the pedicle by means of Skene's clamp and then applied a stout silver wire over two pins, and had removed these on the seventeenth day.

DR. LEE inquired the reason for the repeatedappings, and when Dr. Freeman replied that he had never been able to find out, he stated that he considered it well settled that it was inadvisable to tap unless the operator were prepared to resort at once to abdominal section. Tapping caused localized peritonitis and resultant adhesions which complicated the operation, even as they had in the case just reported.

DR. B. MCE. EMMET presented a specimen consisting of the uterus, bladder, ovaries, and vagina, which had been removed from a patient with the following history: "Age 30, S., admitted to Woman's Hospital Oct. 18th, 1886. Menstruation began at fifteen; it has always been irregular, the flow has been scanty, and it lasts from eight to fifteen days. Pains in abdomen and back for first two or three days. Her general health was good up to five years ago, when she had an attack of supposed malarial fever followed by frequent micturition and dysuria which had persisted ever since. She has also had attacks of retention of urine necessitating the use of the catheter for long periods. In addition to the vesical symptoms, she has had constant severe pain in the right side, aggravated by walking, and this pain has been worse at her menstrual periods. She has had local treatment for the last five years without any relief.

"On Oct. 26th, Dr. T. A. Emmet made a button hole in the urethra to avoid the use of the catheter, acting on his belief that vesical irritability was due to thickening behind the uterus which he had generally found was relieved by dividing through the urethral fascia under the pubes. The operation was not followed by the relief of vesical symptoms, and the catheter had still to be used.

"On Jan. 27th, 1887, cystotomy was performed.

"By March 15th, the vesical symptoms were somewhat relieved, but only partially because there was not a free escape of urine, owing to the posterior vaginal wall closing the fistula, and she still had great pain in the side when walking. As a large circumscribed mass had been felt in the posterior cul-de-sac, which was very tender to the touch and had not changed under treatment extending over a long interval, extirpation of the tubes and ovaries was advised.

"Accordingly, Tait's operation was done April 14th. Three days afterwards, she died of the effects of secondary hemorrhage," which took place the evening of the operation.

The secondary hemorrhage, the speaker stated, was due to rupture in the broad ligament. The specimen showed the thickened mucous membrane of the bladder which the cystotomy had failed

in curing, and the speaker said that he had noticed that cystotomy was not apt to benefit those patients much in whom the perineum was high and the vaginal walls, in consequence, in close apposition. In such instances there was imperfect drainage, although the wearing of Sims' glass vaginal dilator remedied this defect in a measure. The case was further of interest from the fact of the confusion of the symptoms, those pertaining to the tubes and the ovaries being masked by the vesical. The urine had simply contained a little epithelium and pus.

DR. LEE considered the case very suggestive, especially in connection with the last statement made by the reporter. He believed that in many instances where kolpo-cystotomy was performed, the symptoms were reflex from the ovaries, and if these symptoms did not abate we should always carefully examine the latter organs. He could recall a case where he had button-holed the urethra after Emmet's method without benefit to the patient, and then on careful examination under anesthesia he had detected ovarian disease. In regard to the secondary hemorrhage, from the shock of which the patient had died, he desired to warn against making much traction on the broad ligament, in particular the uterine end, during laparotomy for the removal of the uterine appendages, since such traction was likely to cause the broad ligament to tear. In the practice of others, and twice in his own, he had seen oozing from just under the point where the ligature was tightened, an oozing which might have eventuated in secondary hemorrhage had he not seen and checked it. He believed that his immunity from fatal results after Tait's operation was due to the fact that he exerted as little traction as possible on the broad ligaments, and was particularly careful in ligating. He inquired as to what kind of knot had been used in the case reported.

DR. EMMET replied that the Staffordshire knot had been used and as a precautionary measure a second ligature had been placed under it. At the autopsy it was found that the former had slipped.

DR. LEE said that he believed it better for the operator to use the knot with which he was best familiar. He did not think that the Staffordshire knot was better than any other. It was not so much the form of knot utilized as the manner of tying which made the difference.

THE PRESIDENT agreed with Dr. Lee in his remarks about the ligature, but called attention to the fact that the chief point for discussion was the influence of kolpo-cystotomy on hypertrophy of the bladder.

DR. BYRNE stated that the reported case interested him much, since he had had a large experience with similar instances of vesical trouble. In his experience, where the vaginal walls, for one or another reason, lay close together, it was very difficult to relieve the bladder. The patient might wear a properly adapted urinal with comfort in the day-time, but at night there was insufficient drainage and it was necessary, hence, for her to rise frequently to micturate.

THE PRESIDENT inquired the speaker's explanation of this occurrence which he, as well, had noted.

DR. BYRNE replied that it was due to the pressure of the posterior vaginal wall against the artificial fistula. He further stated that, in regard to the method of operating, he preferred the one which he had long advocated by means of the cautery, and that the artificial opening thus made would remain patent as long as was wished.

DR. McLEAN expressed his belief that much could be accomplished in such cases without local treatment. In his hands dilatation and after-drainage gave good results, and were substituted frequently for cystotomy.

DR. EMMET stated that at the Woman's Hospital cystotomy has been substituted for dilatation, because after the latter incontinence had been found to result. In many instances dilatation might result in alleviation of the symptoms, but there were cases where only cystotomy would suffice.

THE PRESIDENT believed cystotomy to be an excellent operation, and he had performed it a number of times, and never to his regret. He had never used Byrne's method, but after making the fistula he had sewed the mucous membranes of vagina and bladder together with interrupted catgut sutures. His experience, when the patient assumed the recumbent position, had been similar to that of Dr. Byrne. A convenient form of instrument to be worn after cystotomy was the ring, with attached urinal, devised by Dr. Jay, which had been exhibited recently to the Society by Dr. Dawson.

DR. HANKS stated that the instrument devised by Dr. Skene, a pessary with attached cup, was useful for carrying off the urine in case of an artificial vagino-vesical fistula.

SELF-RETAINING SIMS' SPECULUM.

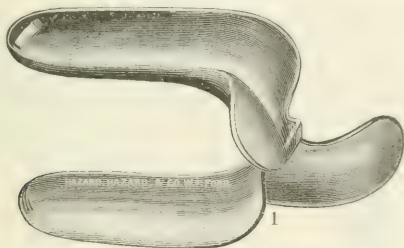
DR. CLEVELAND exhibited and demonstrated on a patient a self-retaining speculum.

"This instrument is designed as a so-called self-retaining speculum. It consists of two Sims' blades, each with flange, and separated by an interval of one inch and three-quarters. (Plate No. 1.) These, though in parallel planes, looking at them from the side, will be seen to be at a slight angle to each other, when held with the concavity of either towards the observer, the nearer blade deflected to the right and the farther one to the left. The object of this will be explained farther on.

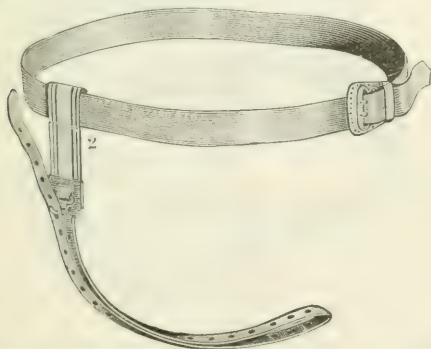
"At the point of each blade is a fenestra, and at the bend of the instrument, where the two blades come together, is a narrow band. To complete the instrument, there is a belt of webbed material to be applied about the waist. On this is looped, to admit of its being moved readily to any position upon the belt, a piece of the same material. To this is attached a long leather strap, with oblong perforations, placed at intervals of half an inch. At the point, where this strap and the piece of belting are joined, there is a hook, the purpose of which will appear later. (See Plate No 2.)

"To apply the instrument, the belt is first buckled by the patient, not tightly, about her waist and outside of her clothing,

with the attached strap behind, and the hook turned outwards. She is then placed in the Sims' position. The operator selects the blade he thinks better suited to the case, and holding the instrument with the right hand, with the left he passes the leather strap through the fenestra at the point of the other blade and then under the metal band, leaving the strap quite loose between them.



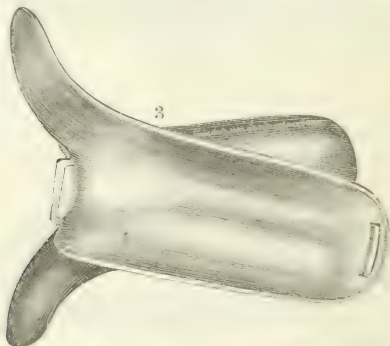
Then holding the speculum, still with the right hand, with the index finger extended along the concavity of the blade, it is introduced, care being taken to pass it back of the cervix. The instrument is then pushed firmly up against the perineum, the outer blade reaching a point just at the bend of the coccyx. I would say



here, in parenthesis, that I have tried the instrument in over fifty women in my clinic at the Woman's Hospital, and find that the interval of one inch and three-quarters between the blades is enough, even in the stoutest women, to include all tissue between the posterior wall of the vagina and the integument between the nates. In very thin women it will even be found advisable to

place a folded towel under the external blade. The next step is to draw the leather strap tight, first through the fenestra and then under the metal band. The perineum is then retracted to the required degree by drawing the strap backwards and securing it to the hook provided for the purpose, and above described. By now using the vaginal depressor, the cervix is brought at once into view.

“When the belt is applied outside the dress it may be necessary to pass the strap through the fenestra at the end of the blade. In many cases the clothing, pushed back from the buttocks, is bunched up so high that it is necessary to have the tension exerted from the two points. If the tension were from the metal band alone, the speculum would be more likely to pull out. When the belt is applied merely over the night-dress, as in an operation, then it may be only necessary to pass the strap under



the metal band, for then the tension is directly backwards, and the speculum cannot possibly pull out, as the strap presses firmly over the point of the blade. Still I should advise its always being passed through the fenestra. This I will explain below.

“To remove the speculum detach the leather strap from the hook. The oblong perforations enable the operator to pull the strap off with the greatest ease. Then the speculum is withdrawn from the vagina and off of the strap at the same time.

“I should here explain why the blades are placed at an angle to each other, as above described. The chief fault to be found with all self-retaining specula is that, to see at all satisfactorily, one has to stoop; while with the Sims' speculum, held by a nurse, we look directly down upon the cervix, as we sit before the patient. This is because the nurse does not pull directly backwards upon the perineum, but a little upwards, thereby tilting the point of the

blade a little downwards. This is precisely what is accomplished by giving this aforesaid angle to the blades in this new speculum, the strap pulling the outer blade directly backwards, thus tilting the other just enough downwards. (See Plate No. 3.) If the strap is not passed through the fenestra, there is danger that the point of the blade under the strap may slip upwards and especially so in thin women, thus deranging the position of the blades in the vagina.

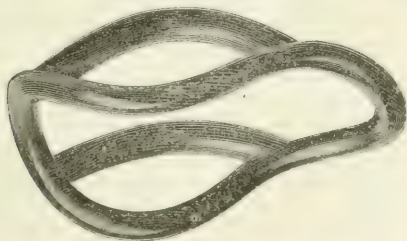
"The instrument seems to possess several advantages which it may be well to mention. In the first place it consists of two blades of different sizes. It is simple, having no mechanism about it to get out of order. It can be easily kept clean, being entirely of metal and in one piece. It does the work at least as well and is cheaper than any speculum yet devised for the purpose, costing, probably, not more than \$3 or \$3.50.

"It is not claimed that it can take the place of a well-trained nurse, but it certainly does better than an indifferent one. It has been used in several cervix operations at the Woman's Hospital with entire satisfaction to the operator.

"The instrument was made for me by Mr. W. F. Ford, of the Instrument Department of Hazard, Hazard & Co., of this city, and is in several sizes."

PESSARY FOR PROCIDENTIA UTERI.

DR. BYRNE apologized for presenting a new pessary, but the one which he offered to the Fellows had proved of such utility in his hands for the relief of a condition which was intractable to the



routine methods that he felt he had ample excuse. The instrument was intended in particular for patients who had passed the menopause and were affected with total or partial prolapse of the uterus. The only other way in which such patients could be relieved was by means of an operation, and this many patients refused to submit to. The Gehrung pessary was an admirable instrument if it were *carefully* watched, but this was often

impracticable, and the patients would return after an interval with the pessary buried in the tissues. Four years ago, he had had constructed a pessary with the end in view chiefly of supporting the lateral vaginal walls, and after a long test he had found that it answered perfectly for the cases he had spoken of. The instrument he presented was an ordinary Albert Smith with the addition of the side bars for the support of the lateral vaginal walls.

DR. LEE inquired if the instrument would remain in position in cases where there had been much injury inflicted to the perineum?

DR. BYRNE replied that it would not; that there must be sufficient of the perineal body left for the instrument to rest upon. Where there was, it could be worn with perfect comfort. The instrument was intended for cases where there was great relaxation of the vaginal walls, and where the perineum was not lacerated to any great degree.

DR. LEE remarked that whilst he considered Dr. Byrne entitled to great credit for the ingenious instrument he had presented, he had personally never found any instrument at all effective in proctidentia accompanied by much relaxation of the vaginal walls or relaxation of the perineum.

THE PRESIDENT believed that the cases where Dr. Byrne's instrument would be applicable were limited. He had recently seen an instance of complete forcible prolapse in a woman who had never borne children where the pessary might have answered. He thought that Dr. Byrne's criticism of the Gehrung was very just, but that aside from this it was a most excellent instrument.

DR. EMMET stated that the instrument recalled an older form of pessary devised by Dr. T. A. Emmet, where a round ring was somewhat similarly shaped, though folded into still more sections, and which he thought would be preferable to Dr. Byrne's, for the reason that it would not pinch the vagina.

DR. BYRNE further remarked that one of his patients had worn the pessary he had presented for over a year with marked relief.

DR. BACHE MCE. EMMET read a paper on

INDURATION OF THE CERVIX UTERI DUE TO LACERATION AND ATTEMPT AT REPAIR. IS IT BETTER TO RESTORE OR TO AMPUTATE?

In the past twenty years the cervix has received its full share of attention, and its injuries have been viewed from most every side. Not so, perhaps, some of the conditions attending the injuries and, in particular, the one to which I here invite attention. Not, by any means, that the condition has been overlooked, but rather, I would say, that its bearing on disease and the future usefulness of the organ has not been considered, nor have any definite rules been laid down by which physicians at large may be guided in dealing with such cases.

There is such a great variety of lacerations of the cervix, it assumes such varieties of shapes due to sloughing, to cicatricial distortion, to erosion from development of the cervical glands, and overfulness of the cervical mucous membrane, that it would be an impossibility to consider each one in detail, and therein lies also the difficulty of being very precise and explicit in seeking to

clear up the unsettled questions on this point. We must view the one condition of induration as a whole, each physician for himself realizing that there will be as many differences met with as there are different cases, and that it is largely the principle which he will have to consider in forming a rule for his treatment of each individual case, adapting and modifying that general principle to the special need of the moment.

In cases of laceration of the cervix which are seen early, that is, shortly after the injury has taken place, say six months, one year, yes, sometimes even two years, although we may recognize, and must, that repair has taken place by granulation and cicatrization, we often fail to find anything much of a cicatrix, and only exceptionally, at so early a period, do we find much general induration either in the angles of the wound or in their neighborhood, in the intervening, presumably healthy, tissue. Let that same case go along one, two, or more years, and there will be an entirely different state of things presented. The cervix will have become larger, not only apparently, but really thicker in its substance, and, from being tolerably elastic, if not friable, it has become firm, unyielding, indurated.

What has been the change, and to what may we ascribe it? The first thought which suggests itself is that of the developed follicles, or cystic degeneration, the cysts filling, emptying themselves, cicatrizing in dozens and hundreds. It is surprising to what an extent this condition may be carried: from the minor degree of a chance cyst under the mucous membrane to finding the entire surface thickly studded with them, not only the surface either, but the substance through and through, apparently. These cysts becoming overfull, that is, the accumulation becoming too great for the strength of the cyst-wall, the latter ruptures, it is supposed, although I have never seen one rupture, nor have I ever seen any of the characteristic contents at the site of an emptied cyst. I do not know that it has ever been seen, still we know of no other way in which to account for the apparent change from full cyst to indurated point at its former location. The result undoubtedly is, in these cases, that where we have a cervix presenting innumerable vesicles or cysts, and leave it to itself indefinitely, the character of the uterine tissue becomes changed from the soft normal to a pathological induration. If we take the case in hand, and empty these sacs as soon as we discover them, we hasten the return of the part to a natural softness and to an improved condition of vitality, the vitality in the former case being of a very low order, due, undoubtedly, to the compression exercised upon the vessels which probably also brings about their obliteration to some extent. The nerve supply is also impaired to some degree, as is the vascular, as is readily understood: they are both choked off.

There can be no doubt that this element enters for a large share

into the production of this condition, but it is only one part of it, certainly. There is a development of indurated, even fibrous, tissue apart from the cysts and in a different location. It cannot be solely of the line of repair of the original cicatrix, for this has, from the first, a defined limit, however large it may have been originally.

It is pretty well accepted, rather by the study of the history of the cases than by microscopic investigation, that the line of union will be slight and the less appreciable the more care has been exercised in keeping the parts clean during repair and the less they have been subject to septic influence, once the solution of continuity has been effected. In the same way is the line of cicatrix supposed to be influenced in its shape from without inwards, being found broader toward the uterine canal than it is toward the periphery of the cervix, in that the lochial discharge retards the closure on the inner aspect and compels the wound to granulate more extensively at that point than is the case toward the outer part, where it is removed from such influence. For the same reason, partly, but also because the lips of the cervix gape, does the cicatrix assume a pyramidal shape, the apex being above and the base at whatever point repair has ceased.

On the other hand, this increase or extension of induration is widespread, at times mostly continuous, but occasionally to be found in patches or in isolated masses. I have known it to be in a lump like a bullet, entirely defined in outline, and separate from the tissue of the cervix.

Is it an extension from the cicatrix proper, one portion after another of the interfibrillar cellular tissue becoming invaded, or is it a progressive induration by transformation of the muscular fibres themselves into fibrous tissue? We have no positive means of deciding this point. So far as we may judge by the appearance of the tissue, we should be inclined to argue against its being purely cicatricial in character; it has not the same mother-of-pearl, glistening appearance; it is not so absolutely white; though poorly supplied with vessels, yet it is more so than tissue which is entirely cicatricial of long standing. In texture it is not quite so elastic, nor to the eye is it as much laid out in fibres as is the cicatricial.

In many cases, when we come to operate upon them for removal of the cicatrix, or cicatricial plug, as it has been called, in that it is convenient to suppose that it exactly plugs the angle of laceration, we cannot trace any well-defined line of indurated tissue, nor yet any positive mass of tissue which differs from its surroundings. The whole cervix has become invaded, the appearance of uterine tissue is entirely lost, and it becomes a question, when shall we cease digging and excising? We are at no time certain, either by the sensation of cutting or by the touch, that we have come down to normal uterine tissue, and we stop with the

thought "that is as far as I dare go," or "as appears to be safe," because of the neighborhood of the peritoneum: or, that we are forming a great pouch which we cannot hope to fill up, except by granulations. The ordinary case, on the other hand, presents a certain portion which the cut of the scissors will tell us is of an abnormal type and must come away, and the matter is simple enough, the parts are brought together, and union is perfect.

Now, when we meet with such a condition, the question becomes pertinent: Is it advisable to hope for a happy outcome by the ordinary operation of bringing the sides of a torn cervix together, or is it not preferable to boldly remove the entire portion of tissue which is so altered, and so make a simple case of what otherwise promises to be a most unsatisfactory result?

Various objections may be offered to this practice, but let us see if they are not offset by the advantages to be gained. The first objection to suggest itself is, that the proceeding is not surgical, that it is dodging the difficulty rather than overcoming it. Such an imputation will not hold. In the first place, as I have shown, repair in tissue of that character is extremely problematical; the vitality is exceedingly low, that is, the vessels of both sorts, capillaries and lymphatics, are very few, primary adhesion is most doubtful, and if it fail, we have anew a granulation process which is to furnish us a fresh amount of cicatrizing tissue; and then, what have we gained?

Instances are so numerous, each one of us sees so many specimens of one another's work which falls far short of perfection, there are so many samples of unsuccessful union throughout the length of a line in which this operation for repair of a ruptured cervix has been undertaken that, knowing the established skill of the various operators, no other explanation seems to offer than that they have had to deal with just such cases in which union is almost impossible.

Once an operation has been undertaken and has failed, it is by no means the rule that the operator recognizes the failure, and, consequently, the patient is doomed to experience the same symptoms and, in many instances, to bear them continuously until the menopause, feeling that all has been done for her that can be. It so often happens that the appearance of the part is deceptive, the external os presenting a virginal contour even, the inner part of the canal being a gaping pocket withal, that even those most expert in handling such cases frequently overlook them. This is not even taking into account those cases in which the operation is improperly performed, in so far that the entire angle plug is not removed, thus causing more interference with the circulation than existed before.

Another objection may be that it threatens sterility through stenosis being produced. This objection cannot be considered for a moment, if the operation for the removal of the induration be

well chosen. It should be performed by the knife or scissors, but by no means with the galvanic cautery; and, if another point be heeled, that is, to remove the indurated tissue in a slanting direction from the crown of the cervix or from the vaginal attachment, as the case may be, upwards to the extreme possible limit of the original lesion, and if care be taken to cover over the denuded parts with the vaginal mucous membrane stitched down to the stump of the cervix, making sure, at the same time, to secure a patent os by tacking the mucous membrane of the vagina down to that of the uterine canal directly at the denuded edge, so that union may take place just so far and no farther, primary adhesion will be secured throughout, no cicatrix is possible, and there need be no question of stenosis. The canal must be as large as it was originally. On the other hand, if the portion excised or amputated, as one may choose to call it, be left exposed, it will, of course, granulate, become covered over with cicatricial tissue, which will contract and undoubtedly tighten up the os somewhat. The same thing will result with even greater certainty, if we make use of the galvanic cautery loop or even of the cautery knife.

As to the choice of the two methods, there would seem not to be a possibility of difference of opinion, once the respective results have been witnessed.

At this point, we may well consider, for a moment, the possibility of inducing an early menopause by this operation. We may already at first thought of the proceeding be led inferentially to view this as a possibility. Take any case of laceration we will, can it ever be proven that that cervix is hypertrophied? Take it in the early part of its history, as I have alluded to it above, when everything is still soft and friable, the os wide open and lips gaping. At that time, if the uterus has not been dragged down to the vulva, we will unhesitatingly recognize, though there may not have been any definite loss of substance, yet that the solution of continuity has undoubtedly given rise to a diminution of volume, atrophy has set in from the early part. The same case viewed later again, as I have indicated above, though it show an apparent increase of size, must be studied with great care, in order that the differentiation between the apparent and real conditions may be accurately made. In one way, there has been an increase in size, as we have already seen. The substance has become thicker, it is true, but it is from a foreign body, the enlarged cyst; remove this or the hundreds and the atrophy will become apparent. It may be said that the atrophy is really a destruction which takes place, in time, from the breaking down of these cysts and the contraction of the small resulting cicatrices, if such there be, and this argument may seemingly hold good and remain uncontroverted were we not familiar with the already established atrophy of the early part of the case.

The other semblance of hypertrophy is derived from the rolling out of the inner face of the cervix and from the vaginal wall adding its thickness to that of the neck, and so increasing its apparent size by at least one-quarter. This is all brought about by the inevitable prolapsus of the uterus, which is part of the sequence of events in all these cases of injury to the cervix, and be it remembered, also, that the longer the traction upon the vaginal wall persists the greater is the thickness produced in it.

Now these two conditions are readily overcome in the regular course of treatment preparatory to considering the direct care which is to bear on the cervix itself or, more properly, on the edges of the laceration, and once all cysts have emptied and the uterus has been maintained at its proper level in the pelvis, we will the more positively see that the cervix is diminutive. Should we wait for some years, we would find that nature would act for us in the same manner, so far as the cervix is concerned. There will come a time when all cysts will be emptied, no more can form, the cervix will then show itself undergoing excessive atrophy, and this condition will bring about an early menopause.

Now, when we cause atrophy in a scientific manner, or ablate the cervix in great part, do we produce the same condition?

There is reason to believe that when a considerable portion of the cervix is removed, it has some appreciable effect upon sexual life, and that menstruation is not apt to be as free later on, and that even menstruation is disposed to cease at an earlier age than when the cervix is intact. This, however, must, I believe, stand as an argument in favor of the operation rather than as opposed to it, and, for the reason that, if we allow nature to do its own working, it does not stop at bringing about the menopause, but, by the same means as that measure has been effected, namely, gradual development of anemia and impairment of nutrition, the general health is much affected and the constitution is prone to break down at the weakest point. If we can operate for the proper closure of laceration in such cases, well and good; the patient's health will be spared and her constitution may be built up again, but should the cervix be composed of the indurated tissue which this paper is specially designed to call attention to, we gain nothing by merely bringing the parts together, even when we succeed in obtaining union. The process of atrophy and undermining of the general health will continue, so that it is far better to anticipate nature and to effect a cure in our own way, removing all that is positively harmful and restoring the parts to a quasi-natural condition. All pernicious influence is at once overcome, and we may feel that our patient has the best guarantee of restored health; though she may have the menopause established somewhat earlier than she might expect, yet it will not be from impaired vitality.

Just here it seems appropriate to consider the question of im-

pregnation in these various conditions, that is, in that after operation in the usual way and that after excision as here advocated. At one time it was strongly urged that the operation of trachelorrhaphy was not justified, in that it produced sterility. Abundant testimony in every one's experience has long since refuted this charge; nevertheless, we must all have seen cases, even of our work, which certainly did not admit of impregnation. It may be taken as a reliable statement, I think, that impregnation is never rendered impossible by this operation, provided it has been well performed, in a suitable case. The many failures of one kind and another which are met with are sufficient reason for continued sterility. These cases may be operated upon anew, and impregnation take place. These failures, as a rule, mean either that the diseased follicles have not been thoroughly excised, or that the edges of the canal are not brought into accurate apposition, or again, that the edges are not pared to the summit of the crown, in consequence of which there is still a rolling out of the mucous membrane of the canal. Accompanying all these conditions there will still remain a white-of-egg discharge, which plugs the canal, and forms a barrier to conception, to say nothing of its effect in keeping up the size of the uterus, and in maintaining an anemic condition of the patient. It is seldom that sterility is induced by simply making the os too small, though designedly that may be brought about. The excision of the indurated cervix, the stump being covered with vaginal mucous membrane, makes sure of an absolute cure, so far as the above points are concerned: it leaves an os closely resembling the natural one, the whole appearance of the parts being such in time as to deceive even an expert, and the chances of conception are thus, I believe, far greater in a given number of cases treated in this way than in the same number by the other operation, largely because the former is much more simple and the average results are sure to be better.

The more I see of operations on the cervix for closure of a laceration, the more I become convinced that it is not an operation for every one to undertake, and that a considerable experience is essential to uniform success. The excision, on the other hand, is comparatively simple and easy; one might almost say it is a difficult matter to make it a failure.

A far more plausible objection than all these may be offered by those who have had experience with the method, and it is the one which has a positive value, namely, the fear of producing retroversion or of preventing its cure.

In this connection, there are several points to be considered. First, in facing the possibility of producing a retroversion, we have to take into account the size, weight, and mobility of the uterus, the amount of cervix already destroyed, the amount one expects to take off, the greater or less prolapse of the uterus and of the vaginal walls, the amount of abdominal pressure, and the

occupation of the patient. Second, in the case of the existence of a retroversion at the time of desired operation, its cause, whether through inflammatory thickening of uterine ligaments or adjacent parts, also the increase of size and consequent weight of organ.

As a rule, when amputation of the cervix has been resorted to, it has been on account of a seeming hypertrophy, which it was thought best to dispose of in this manner, or else for the removal of malignant disease, either in its incipency or advancing towards the body of the uterus. It has also been advocated for the cure of prolapsus and procidentia by means of the galvano-cautery, and good results are said to have been obtained.

Dr. Sims did, however, take off a part of the cervix in the manner here indicated, but its scope was limited to the removal of the large number of cysts which covered the surface, and such practice is followed to-day by a few operators. He devised also the admirable method of covering the stump with the mucous membrane; but for whatever purpose undertaken and in whatever manner performed, it has been frequently noticed that such uteri are prone to become retroverted and, in the instance of those already displaced, as we are very apt to find them in cases calling for this operation, in that the uterus is at first enlarged, then prolapsed, and finally retroverted, it becomes a most difficult matter to restore them and to hold them in place.

In the first instance, though we certainly diminish the size and weight of the uterus, yet by making use of a part of the vaginal mucous membrane do we as certainly drag the uterus somewhat lower in the pelvis and so put it in a position to be acted upon unfavorably by the abdominal weight and pressure. The result is, it inclines slightly backward and finally becomes thoroughly retroverted.

In the second instance, if we have a retroverted uterus to hold up and the first indication be to diminish the weight of the organ by the proceeding under consideration, in that we bring about involution, we must realize that the more we take up of vaginal tissue to cover the posterior portion of the stump, the more we are obliterating the vaginal cul-de-sac, at the same time we are making the cervix fast at a given point on the roof of the vagina; and we will find, as a consequence, both that the cervix has no play to be set back in the hollow of the sacrum, and that we have no cul-de-sac in which to act with our pessary.

In time, however, the uterus settles down in the pelvis; more, there is a seeming cervix shaped and then it is that the case presents such a deceptive aspect, and one would scarcely realize that a large portion of the cervix had been removed.

Then, again, our pessary may come into play and we may maintain the uterus in its rightful position, so far as this one difficulty has had to be overcome. Other features will be the same to deal with as in similar cases, and need not be considered here. So that

this objection, though a substantial one for some time after the operation, becomes less and less a positive one as time goes on.

We see then that, as compared with the benefit of this method, its contraindications are few, and that we may have recourse to its practice in many instances with every promise of good success in restoring the woman to health and the uterus to future usefulness when, by persevering in seeking to build up tissue of poor vitality and low organization, we but inflict additional misery and suffering upon the patient and can take but little credit to ourselves for operative skill.

In opening the discussion, DR. BYRNE stated that his own views and practice were entirely in accord with those of the reader. The arguments adduced were thoroughly convincing. He had seen many cases of stellate laceration, and over and again he had endeavored to heal the rents by some plastic operation, but always with failure. Several years ago, he had begun to trim off the cicatricial masses and had since obtained good results.

DR. HUNTER agreed with the views advanced by the reader, and stated that for a number of years he had been in the habit of operating in a similar manner, although he had found it somewhat difficult to obtain good adaptation. He asked the reader to describe his exact method of operation.

DR. EMMET stated that the method was essentially that of Sims, although he, personally, aimed at the removal of more tissue. All the cicatricial tissue must be removed, no matter to what depth it extended. Coaptation after Sims' unmodified method was not so good, for the reason that the excision was not so extensive.

DR. HANKS inquired if the reader passed his sutures through the mucous membrane of the vagina and then through the stump of the cervix.

DR. EMMET replied that this was the case except at the site of the cervical canal. His operation differed from Schroeder's in that it was not so superficial.

DR. HANKS remarked that we had probably all of us concluded that sometimes we left too much of the cervical tissues at the os externum. He believed that more should be removed and that we should not fear shortening of the cervix as much as was our habit.

DR. JANVRIN said that he had operated on many cases similar to those described by Dr. Emmet, and that he had frequently denuded the entire lacerated cervix as high up as was possible. He could not, however, understand why in such instances the mucous membrane of the vagina could be brought in contact with that of the cervix. In cases where he had denuded completely, he was in the habit of inserting a small cotton tampon in the cervical canal and beyond the internal os with a string attached and projecting from the vulva, and leaving it *in situ* for forty-eight hours. Experience had taught him that thus he avoided reformation of cicatricial tissue, and he obtained a perfect cervix. He passed his sutures deep enough to keep the edges well together, and he passed one either side of, and close to the external os. He was familiar with cases where pregnancy had occurred after this operation.

DR. LEE considered Dr. Emmet's proposition a decided advance in our surgical methods, but he was unwilling to grant that retro-

version was not likely to follow such amputation of the cervix. From his observation of a number of cases of epithelioma where he had amputated the cervix, he was satisfied that the resulting retro-displacement was intractable to mechanical treatment. There did not exist a pessary which was of the slightest utility after the vaginal portion of the cervix had been largely removed. Dr. Emmet's method, therefore, he thought was of value where the uterus was in good position, but not so where there existed a tendency to retroversion.

DR. BYRNE said that in cases requiring such radical measures, if the cervix were removed by the cautery instead of by the knife, and if the organ were kept in proper position for five to six days afterward, in his experience it would stay there. He was in the habit of using a firm tampon (carbolyzed and with tannin) for three days, and at the end of this period replacing it by another.

DR. LEE suggested that the reader's paper did not include treatment by the galvano-cautery.

DR. BYRNE further remarked that in two instances thus treated pregnancy had resulted, and he claimed that no cicatricial tissue followed the use of the cautery.

THE PRESIDENT called attention to the fact that one point had been overlooked in the discussion, and yet it should be referred to, and this was the reader's statement that removal of the cervix was likely to produce premature menopause. He did not think such a statement justifiable. He agreed perfectly with Dr. Lee in his remarks about retroversion of the uterus after amputation of its cervix.

DR. EMMET replied that he did not intend to minimize the danger of retroversion, but he did not think the organ so likely to retrovert since it became lighter after amputation. Later on it sank into the pelvis and a cul-de-sac was formed. In regard to the galvano-cautery, he had not used it personally, but he had seen cases after its use; and there certainly was a cicatrix, the parts being often so puckered that a sound could not be passed.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of April 7th, 1887 (continued).

PYO-SALPINX IN ITS RELATION TO PUERPERAL FEVER.

DR. J. M. BALDY presented this specimen, not simply because it was one of pyo-salpinx, but because of its extremely important relation to the puerperal state, and, as far as he is aware, because it is the first of its kind ever operated upon, and life saved when the patient was dying from so-called puerperal fever. The patient, Mamie P., 23 years of age, was delivered of a male child after a tedious but normal labor some four years ago. She

was at that time confined to her bed for eight weeks with "an inflammation in her stomach." She, however, made a good recovery, and has not suffered from pain or ache in her abdomen since. On February 3d, 1887, he was called to attend her in her second labor. Although he went with the messenger, he found the labor over; a dead child, together with the placenta and all the membranes intact, lay between her thighs. Her uncovered arms, chest, and legs were exposed in a room without a fire. No examination was made, but she was put between warm dry bed-clothes as quickly as possible. On the second or third day, she had a chill with a quick rise of pulse and temperature, a tympanitic and tender abdomen. These symptoms abated somewhat and he lost sight of her for several weeks. On the 3d of March, one month after her confinement, he was again summoned to her and found that she had been suffering ever since he had last seen her. She had become so emaciated that he hardly recognized her. Her temperature $102^{\circ}+$ and pulse 130. She had continued chills and creeps, hectic night sweats, and sleepless nights; her abdomen was swollen and tympanitic, and intensely painful, her bowels loose and fetid; micturition and defecation were both painful. She was evidently fast approaching death. An examination of the soft parts showed no sign of a recent tear. The uterus was subinvolved and on the left side there was a large boggy mass firmly adherent, tortuous, and extremely tender. The right side was tender, but no mass could be detected. Abdominal section was advised as the only remaining hope of saving her life, and the proposition was eagerly accepted by the patient and her friends. Dr. J. Price saw the patient and confirmed his opinion of immediate operation. He operated on March 5th, the delay being necessary in order to have her surroundings cleansed. Drs. J. Price, McMurtrie, of Danville, Ky., and Mr. Eckman of Scranton, Pa., were assisting. The right tube and ovary were healthy and were not removed; the left tube was almost as large as the uterus, and was firmly adherent in all directions, especially to the bowels from which it was separated with great difficulty. An abscess of the cellular tissue was ruptured while breaking up the adhesions, and pus welled up through the abdominal incision. Both tube and ovary were removed. A large cheesy mass on the bowel at the point of adhesion was trimmed down with scissors, and Monsel's solution applied to the bleeding points. After a free irrigation, a drainage-tube was put in and the incision, which was only one and a half inches in length, was closed. The tube was found to be distended with pus, the ovary was disintegrated and contained pus. The patient rallied quickly and had no shock. Her pulse fell to 80 and her temperature to normal within twelve hours and remained so. The tube was removed on the seventh day. There had been little or no pain, no catheter, no laxative or drug of any kind had been employed. The day after the removal of the tube

her pulse began to rise, as also did her temperature. Pain developed in the left ovarian region, and she began to have hectic and cold creeps. About the eleventh day there was a free gush of pus from the tube tract, and she began to improve again from that moment. A rubber tube was inserted and passed deep into the pelvis, and the abscess was washed out twice daily. The discharge gradually diminished, and the tube was again removed. The wound is now completely healed, and the patient is a well woman.

The belief that a certain proportion of our puerperal fever cases are simply cases of salpingitis septica is by no means a new one, and is probably held by most of the great operators in the world. Dr. M. Sänger says that "salpingitis septica coexisting with severe puerperal septicemia has never as yet given the surgeon an opportunity to remove the principal focus of disease by the extirpation of the tubes. It is possible, however, that under certain circumstances such a procedure might be indicated." Dr. Carl Schroeder holds that "septic endometritis does not extend to the tubes, as a rule; occasionally, however, it does go on to a purulent salpingitis." That these cases do exist much more frequently than we have had any idea of is certain, and that oftentimes a life, otherwise doomed, can be saved by operative interference is proved by the case presented to-night. Mr. Tait mentions four deaths from this cause in Queen Charlotte Hospital alone, and says "that these cases were, during life, all regarded as puerperal fever." Dr. A. Martin, out of a total of two hundred and eighty-seven cases, found that seventy resulted from the puerperal state. Dr. Sänger mentions two cases which have come to his knowledge in which the over-distended tubes burst and discharged pus into the abdominal cavity, with death on the fourth day after confinement in one case, and on the twenty-first day in the second case. He thinks that in both these cases the salpingitis existed before delivery, and mentions a case in his own practice in which this certainly was the condition. Hecker as early as 1878 mentions two cases in which the pyo-salpinx was old, and was only lit up by the puerperal state. Whether the disease arises *de novo*, or, having already existed from other causes, is simply lit up by the puerperal state, must be determined in each individual case. Hecker's and Sänger's cases, as mentioned, had a pre-existing salpingitis, but in the seventy cases reported by Martin the micro-organisms of puerperal septicemia were found in the contents of the tubes, and no mention is made of any other micro-organism; so it is fair to presume that these cases arose from the puerperal state pure and simple. Of course, the possible contagion of gonorrhea can never be eliminated except by a microscopic examination. In his case, although the trouble seemed very clearly to have arisen at the time of the second labor, possibly with her first labor also, yet the chances of gonorrheal infection, both before

and after her first pregnancy, are so great that he cannot pretend to say it was not present. The operation has up to this time been done at least four times in Philadelphia; one case was operated on just two weeks previous to mine by Dr. Longaker, in which a pyo-salpinx was found and removed, the patient dying on the second day. Dr. J. Price has since operated twice, and in one case found more than a quart of pus in the abdominal cavity. The cases unfortunately fell into his hands too late, and the patient survived only two days. These cases, though few in number, certainly teach us that the work done in this direction is encouraging, and although a large percentage have died, it only warns us of the extreme importance of an early diagnosis and prompt surgical interference. It becomes our imperative duty in every case of post-puerperal trouble to make a thorough investigation of the case on the appearance of the first symptoms, and should a fulness be found on either or both sides of the uterus, accompanied by pain on touch, and with constitutional symptoms of gravity, there should be no hesitation as to the course to pursue. This being secured, our present high mortality of one woman out of every hundred delivered in large cities, as recently stated in a statistical paper on lying-in charities in the United States, must be largely diminished, and the fatal influences now surrounding our parturient women must become infinitely less.

DR. J. PRICE remarked that the operation in this case was difficult and tedious, and was done with great care. He believes that conception can take place coincident with desquamative salpingitis. Salpingitis, even of gonorrheal origin, may affect one tube only, and the other, being normal, may give exit to an ovule; Six months ago, he removed a large pus tube from the right side: the woman is now four months pregnant. If he finds induration and distention of a tube with inflammatory symptoms during the post-parturient period, he does not hesitate to operate at once, the operation involving less danger to the patient than the rapid progress which the inflammatory process will take at that period. He read from a letter from Mr. Tait: "There can be no doubt as to the frequency of the occurrence of puerperal pyo-salpinx, and what we want to do is to hammer at people until we get them to open the abdomen in primary puerperal peritonitis." Dr. Price does not think septic post-partum salpingitis would be unilateral. He would also call attention to the extreme degree of degeneration that has taken place in the tissue of the tubes themselves, and most commonly unilateral only; they are quite cheesy in character. This change could not occur in so limited a space of time, a few days only.

DR. LONGAKER remarked that one of the four cases referred to by the author of the paper was a patient who was under his care and who died forty hours after operation. Briefly, the history of the case is as follows: A young woman from Maryland came to my office, being in the sixth month of her first pregnancy, for treatment for a profuse muco-purulent discharge having all the characteristics of a recent gonorrhea. A month later premature labor set in. The child did not live. The placenta came away en-

ture. Four days after labor, she began to complain of a severe pain in the left inguinal and hypogastric regions, paroxysmal and associated with great tenderness. The tongue was dry, but there was no nausea or vomiting. There was no chill, but the temperature was slightly elevated. The same symptoms continued for the next two days. On the morning of the eighth day, 7 A.M., she began to complain of intense cutting pains, temperature 96.5° , pulse 96. Four hours later, under the free use of morphia, the pain was relieved, the temperature had risen to 102° , and the pulse to 120. Dr. Jos. Price kindly saw the case with him and they agreed on the advisability of laparotomy. During the afternoon, her temperature continued to rise, reaching 104° in the evening. On the following day she was much better, was free from nausea and vomiting, and had no severe pain. Owing to this apparent improvement, Dr. Longaker allowed himself to be persuaded to put off operating. The abdomen was opened Feb. 14th, 1887, the ninth day after delivery and nearly sixty hours after the onset of acute peritonitis. General peritonitis and a large quantity of pus in the region of the left cornu uteri, exceedingly foul in odor, were found; the left tube was removed; it was an inch in diameter. The uterus was fairly involuted, it was firmly fixed in the pelvis. The wound drained freely, but incessant vomiting set in and the patient died forty hours after operation. Is it not assuming too much to say these cases had pyo-salpinx before conception? He is sure such was not the case in his patient; though she had lived irregularly with a man for some five years, she had had at no time such symptoms as would lead us to suspect this disease. It would be possible, if pyo-salpinx be the consequence of a poison from without, to find entrance to the tubes during the first three and a part of the fourth month before decidua vera and reflexa became firmly united, but the result would most likely be an abortion at the time of the invasion. The morbid matter probably obtains access to the tubes after parturition is completed, and owing to the combined circumstances acts in an explosive manner. Is not the pyo-salpinx originated after labor the result, it may be, of a gonorrhoea contracted between conception and labor or before conception?

DR. HIRST presented a specimen from a case of

VIRULENT PUERPERAL SEPSIS

by permission of Prof. Parvin, in whose service the case occurred.

The specimens are interesting, not merely because they come from a case of puerperal fever, which unfortunately is not a rare disease, but from the rapidity with which the disease terminated fatally, and from the possible point of entrance of the septicemic poison. The history of the case before delivery presents nothing worthy of note. Immediately after delivery the temperature was 99.5° , and in spite of the most energetic antiseptic treatment of the vagina and uterine cavity the temperature rose to 102° , but dropped again to 99.5° , only to rise again to 102° , where it remained till the woman's death, about seventy-two hours after the birth. The post-mortem examination showed diphtheroid patches in the vagina extending into the cervical canal. The uterine cavity and walls were normal; the peritoneum, tubes, and ovaries healthy; the kidneys were the seat of numerous metastatic ab-

scesses, and there were several infarcts in the liver. The lungs were healthy. The rectum was covered with extensive patches of diphtheroid membrane: a very interesting condition, for it indicates the possibility, at least, that here was the point of infection, and if this is the case, this specimen at once assumes considerable importance, for only three such cases are recorded in medical literature, one by Winckel, the others by Koester and V. Recklinghausen. These specimens may well serve to call attention to the possibility of infection by the administration of enemata, and to the importance of observing the most minute precautions as to the chemical cleanliness of every instrument that may come in contact with the parturient or puerperal woman.

A LARGE OVARIAN CYST CURED BY EVACUATION, DRAINAGE, AND OBLITERATION OF ITS CAVITY.

By DR. W. H. PARISH.—On January 27th, 1887, I operated on a Jewess, 27 years of age, for the removal of a large abdominal cyst. I saw the patient for the first time on January 24th. She was then under the charge of Dr. N. Hickman, who placed her under my care for operation. She was the mother of four children, the youngest only four months of age. In her last labor she had been attended by a midwife, and but little reliable information could be obtained in reference to the existence of an abdominal tumor during the three weeks following labor. The patient stated, however, that the abdomen was not unusually large after the birth of the child. About three weeks after labor, she was under the care of Dr. Hickman for a few days, during which time she presented the usual symptoms of general peritonitis. She then passed into the hands of others and was not seen again by Dr. Hickman until just before I operated. During this period of about three months, she was visited by a number of medical gentlemen, and aspiration was resorted to by one of the number. Laparotomy was repeatedly urged, but persistently refused by the patient. The abdomen increased rapidly in size, pain became constant, the appetite entirely disappeared, vomiting occurred at very short intervals, hectic became marked with occasional rigors, and emaciation had reached an extreme point. The lower extremities were but slightly edematous and there was no special enlargement of the superficial abdominal veins. The abdomen was greatly distended, tense, and tender, and the patient was so exhausted that she could not rise from the semi-recumbent position. She was at once transferred from her surroundings of filth and poverty to a private hospital, and I operated without delay, as it was apparent that without surgical relief her life could last but a few days longer. There were present Drs. Hickman, R. P. Harris, S. D. Lazarus, John H. and F. A. Packard. The patient had been given a general hot sponge bath with soap and water, and stimulants had been administered. Before etherization the pulse was 130 per

minute. There was a dull percussion note over the entire abdomen anteriorly, and the diaphragm was evidently pushed well upwards by the tumor. Fluctuation was distinct, though palpation suggested a thick-walled cyst rendered very tense by reason of the degree of distention. I gave a diagnosis of ovarian tumor with suppurating contents and extensive adhesions.

The patient having been etherized and the bladder emptied, I made the usual incision in the median line. On cutting through the attenuated abdominal wall, the peritoneal cavity was not opened, and the knife cut into the cyst-wall. This was easily recognized, inasmuch as its consistence, color, and anatomical elements were plainly different from those entering into the formation of the abdominal wall. There were evidently anterior adhesions of such extent and firmness as to effectually protect the peritoneal cavity. The cyst was now opened, and a quantity of pus-like fluid of offensive odor escaped. The cyst did not empty itself, and the introduction of two fingers showed large masses of a lymph-like character, varying in density and size. To remove these masses required a slight enlargement of the incision and the introduction of the hand. In the interior were a number of thin septa such as are seen in colloid ovarian tumors. The sacculi thus formed seemed to communicate with each other by reason of the degeneration and breaking down in places of the septa, though it was necessary to tear through the septa in places in order to free the contents of some of the sacculi. The great bulk of the contents was an apparent mixture of pus, lymph, and detritus, while part presented the translucent appearance of the fluids of some ovarian tumors. After thoroughly emptying the tumor, it was very apparent that its walls were everywhere adherent. No portion of the wall could be brought into the abdominal incision. There were evidently dense adhesions to the liver, spleen, stomach, intestines, and to the pelvic brim and contents; the tumor did not dip down into the pelvis. The walls were everywhere thick and strong, presenting no points of attenuation.

At this stage of the operation, the patient's condition seemed one threatening imminent death, the pulse having become exceedingly feeble and 140 per minute. The ether was now withdrawn, and was not returned to. Stimulants were administered hypodermatically. The question now presented itself, Shall I tear up the adhesion and remove the cyst? The adhesions were certainly universal and doubtless vascular. Their separation would occasion some loss of blood, would probably necessitate the application of numerous ligatures, and would be accompanied with a prolonged exposure of the abdominal cavity. All this would greatly increase the shock of the patient, and she was already in extreme danger from exhaustion. The uniform thickness of the cyst-walls and the adhesions themselves rendered the case one

well adapted to treatment by drainage. I decided not to remove the cyst, and in looking back upon the case, I now feel that its removal would have been the height of foolhardiness. I now thoroughly cleaned its interior by peeling off the adherent flakes of lymph, by rubbing its surface with sponges, and by washing it out with two gallons of hot distilled water containing corrosive sublimate about 1 : 10,000. Not only was the interior of the cyst thus thoroughly cleaned, but the hot water, brought in close proximity to the large sympathetic ganglia, doubtless aided in lessening the shock. I now introduced a glass drainage-tube, and approximated around it the walls of the abdomen and cyst, carrying the suture into the cyst-wall, but not through it.

The patient rallied well on the day of the operation, and there was no ether vomiting. For several days, there was a discharge through the tube of a purulent fluid similar to portions of that removed during the operation. The character then changed to that of ordinary pus. The cavity of the cyst was daily emptied of accumulated fluid, about two ounces, and phenol sodique was injected in about the same quantity. Phenol sodique is doubtless a disinfectant, astringent and stimulant in its local action.

Immediately after the operation, the abdomen was covered with a compress firmly held with adhesive plaster and binder, the object being to keep the inner cyst-mass approximated, and to encourage absorption of the exuded lymph. The area of dullness dependent upon the remaining thickened cyst-walls diminished rapidly from day to day, and the discharge diminished with surprising rapidity. Evidently the cyst-walls were shrinking, and in an astonishing manner, while the interior was forming a very little of ordinary pus. At the end of two weeks, a shorter drainage-tube was substituted, and at the end of three weeks rubber tubing about three inches in length was introduced in lieu of the glass tube. The sinus then existing soon closed, and the wound was entirely healed by the end of the fourth week. The patient was permitted to leave her bed at the end of three weeks. An examination made at the end of five weeks showed a small, flattened mass underlying the abdominal wall and adherent to it, the mass not being more than two by one inches.

On the day after the operation the patient's appetite began to improve, and very soon became almost ravenous, and she was at once fed liberally. The vomiting and hectic disappeared with the evacuation and disinfection of the cyst, and the features of suffering and despair rapidly gave place to those of returning health and hope.

The recovery of the patient is now complete, and I feel confident the cyst cavity is so effectually obliterated that it cannot again refill.

The rapidity of recovery was certainly surprising, and very naturally it may be asked, Was it an ovarian tumor? Does not

the rapidity of the shrinkage and the rapidity of the disappearance of the cyst indicate that it was not an ovarian tumor? I will answer in the negative.

It was not an extra- nor an intra-peritoneal abscess, for abscesses do not contain such septa nor such fluid. I have operated on a number of such abscesses, and am confident that in this patient the condition was not that of an abscess. The character of the contents and the septa distinguish this case from two cases operated on by Mr. Tait, in which he ascribed the tumors to distention and suppuration of a sacculated urachus.

In making the abdominal incision, I recognized the peritoneum external to cyst. In my own mind, there is no doubt as to the tumor having been ovarian. A specimen of the fluid was examined microscopically by Dr. F. A. Packard, and he has written as follows: "I found it to be composed of numerous fatty degenerated epithelial cells, leucocytes, and granular material entangled in a dense meshwork of fine homogeneous fibrin-like fibres. There appeared to be no definite arrangement or other evidence of an organized tissue. The general appearance was that of a tissue that had undergone almost complete fatty degeneration. I unfortunately ruptured the small cyst before I could collect the contents for microscopic examination. I found no so-called ovarian cells in the other portion."

The rapid recovery of this patient of course evinced the judiciousness of the treatment, and should serve to remind operators that these same tumors, even some ovarian tumors, should be treated by complete evacuation, disinfection, and drainage. The combination of conditions existing in this case is rarely met with, and had I followed the routine treatment of removal, the patient would not have recovered. The cyst-lining had throughout most of its extent ceased to form the peculiar fluid of ovarian tumors, and had become chiefly a pus-forming surface. The inflammatory deposits on the outer wall and the adhesions established had so thickened and strengthened it so as to prevent rupture or attenuation from the rapid accumulation of fluid. The tumor had lost largely the characteristic of an ovarian cystoma, and had become a cavity containing chiefly pus.

DR. R. P. HARRIS.—The cyst contents consisted chiefly of a thin greenish fluid of a puriform character in which were found masses of cell structure, some of them as large as a fist, on the surface of which were in some instances still to be seen small translucent cysts containing a yellowish fluid. There was also noticed during the emptying process an escape of fluid, from cells which had preserved their integrity, which resembled to the eye what is often seen in the tapping, during ovariectomy, of multilocular tumors. My own impression during the operation was that the tumor was ovarian.

The emaciated state of the woman, her rapid pulse, and the strong adhesions of the cyst-wall to the abdominal parietes and

viscera, satisfied me that any attempt to remove the cyst would cause the patient either to die upon the table, or of shock in a few hours. Judging from the recoveries after the secondary operation in abdominal pregnancies, where it has been found of vital importance not to remove the cyst—a measure the value of which was discovered by an accident more than ninety years ago in New York City—which occasioned its being left in situ, and eventuated in saving the woman, it was decided to adopt the same plan here.

When the abdominal wound was closed in Dr. Parish's case, the thick cyst-wall could be felt like a large disk with edges more than half an inch thick. As the disintegrating process thinned the cyst-walls, contraction of the disk took place, and the centre of the abdomen became deeply fissured, until the diameter of the disk was not more than three inches, and it was also much thinner. This change continued, until the percussion sound showed no dense structure beneath the abdominal wall.

As the ovarian tumor was so altered in structure by peritonitis that its lining surface could no longer secrete ovarian fluid, there was no risk of the formation of a discharging fistula, and the wound rapidly closed as the sac contracted.

Dr. B. F. BAER remarked that he thought Dr. Parish acted wisely in not attempting to remove the source from which the fluid was secreted. He was led to express this opinion, first and mainly, because the doctor was not sure at the time of operation that there was a tumor, and secondly, of its very close adhesion, if a tumor existed. He questioned the ovarian origin of the fluid in this case upon the following conditions as stated by the author: 1st. The difficulty of diagnosis before operation. 2d. The character of the fluid: absence of the ovarian cell especially. 3d. The fact that the secretion so readily ceased after the sac had been opened. 4th. Because there was such a rapid disappearance of the cyst-wall. It is so well known to all of us that the secreting surface of a true ovarian tumor is not destroyed by tapping or drainage that we have come to regard tapping and even drainage as very bad practice where the tumor can be removed even at considerable risk; free drainage and injecting the tumor were long ago given up as futile in the cure of ovarian tumors. Then the sac of an ovarian tumor does not soon undergo atrophy and absorption even if the secreting surface is destroyed. The cases of extra-uterine pregnancy mentioned by Dr. Harris in which the sac disappeared so readily were doubtless of the abdominal variety, and the gestation sac therefore largely, if not entirely, adventitious. This was probably the character of the sac in a case upon which he (Dr. Baer) operated some time ago and removed a full term child which had been dead thirteen months. The fetus only was removed. A drainage-tube was placed in the sac. The patient recovered, and all remains of the fetal envelope have disappeared. Dr. Baer would admit, however, that the fluid in the case reported to-night was very like ovarian except in the absence of the ovarian cell which he regarded as of very great diagnostic value in a doubtful case. He requested the President to express his opinion concerning the absence of the cell in this case.

Dr. DRYSDALE remarked that it would be very difficult to detect the ovarian cell in such a mass of purulent matter; but if the fluid of the child cysts had been examined, the cell would most

probably have been found. He dwelt upon the importance of the investigation of the fluid being made by one familiar with the appearance of the ovarian cells and those resembling them, as without such experience it was difficult to differentiate the cells. Dr. Drysdale referred to an obstetric case which Dr. Parish had attended for him four years ago. This lady suffered from a tumor some years before, which proved to be a dermoid cyst developed in the posterior wall of the uterus. During its growth, it formed communication with the bowel and a great quantity of offensive fluid escaped in this way. The opening into the bowel closed, the sac filled again, the patient emaciated rapidly, and septicemia set in. Aspiration was resorted to, and a quantity of very offensive matter removed, after which the cyst was washed out with a five-per-cent solution of carbolic acid; this was repeated nine times at intervals, the patient declining any other operation. She had now become so emaciated that every process of bone showed through the skin and her pallor was extreme. In this condition, with a pulse of 140 and a temperature of 105°, she finally submitted to an operation. Before this was commenced she was told that it was not likely that the tumor could be removed, as from its location in the uterine wall and its former communication with the bowel, it would probably be found firmly adherent to the surroundings parts. He therefore proposed opening the abdomen, and if the tumor was found as he apprehended he would stitch the edges of the cyst to the lips of the abdominal incision, insert a large drainage-tube and close the wound. This was done, and although the case was so unpromising she made a good recovery, while the cyst gradually contracted and finally disappeared; but there still remains a fistulous tract where the tube was inserted, which occasionally discharges matter. She became pregnant about three years after the operation and was delivered of a male child by Dr. Parish, who informed him that she had an easy labor.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, May 27th, 1887.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. HENRY T. BYFORD made the following remarks upon

THE PELVIC VISCERA OF AN INFANT, THREE DAYS OLD.

I have here the pelvic organs of an infant, three days old, which present some interesting facts bearing upon normal anatomy. We have the bladder in front, and the uterus situated behind and to the left side, directly in front of the rectum. The lower end of the cervix is decidedly to the left, as we often find it in the adult. The uterus is constituted of about one-fourth corpus, and three-fourths cervix; the cervix is also wider and thicker than the body. And what is also characteristic, and was

first noticed by Winckel, the Fallopian tube, ovarian ligament, and broad ligament on the side towards which the uterus is placed are shorter than the tube and ovarian ligament on the other side, showing that in this case the normal position of the cervix is to the left of the median line. There is also a slight persistent ante-flexion. The rudimentary ovaries are almost against the uterus, and the right one and one half times as large as the left. The cervical cavity is quite large and contains mucus. The cervix extends considerably below the *cul-de-sac* of Douglas. The uterine artery enters the uterus a little above the middle of the cervix, considerably below the upper end of the cervical cavity. It is also interesting to note that the arteries upon the right side are larger than on the left. The uterus has a slight inclination from the cervix up towards the right and towards the median line, and thus already exhibits a slight lateral version such as we see in adult life. The vesico-uterine and sacro-uterine folds are well developed.

DR. C. T. PARKES.—I should like to ask if the doctor's idea is that this slight deviation to the left of all the organs in this specimen is what we would expect to find when the individual has reached adult age?

DR. H. T. BYFORD.—This is the point I wished to bring out. Of course, the uterus develops from the cervix upward. To a certain extent, the corpus uteri here is elementary and, in growing upward towards the centre, perhaps the fundus would pass the median line, yet would not prevent a slight lateral version. This, I think, is normal in a large number of cases. In examining patients for uterine disease, in the majority of cases we find a slight lateral position of the cervix, more often to the left, but occasionally to the right. Even when the cervix is in the median line, we cannot say that it is in its natural position, for it may have been drawn there by pathological conditions.

DR. CHARLES T. PARKES made the following remarks on,

1. A CASE OF OVARIAN CYSTOMA, WITH TWISTED PEDICLE.

The first specimen that I present for your inspection, is a case of ovarian cystoma with a twisted pedicle. The case was that of a woman, about 45 years of age, upon whom I operated a few weeks ago, and it was one of those satisfactory cases that we meet with occasionally, in which the patient positively gets better from the very day of the operation. This lady did not know that she had an ovarian tumor, previous to an attack of illness which came on about the 6th of April last, when she was seized with distention in the abdomen, pain, and vomiting. She came under my care a week or so after this, with a temperature of 103° F., pulse 120, distended abdomen in which a tumor could be felt, and with evidence of severe peritonitis. At that time, I rather suspected that the cause of the trouble was some difficulty with the cyst, because I had the honor last year to report to the Chicago Medical Society a case in which the symptoms were very

similar to this. It was a case of a twisted pedicle, in which the symptoms were abdominal pain, high temperature, and acceleration of pulse. Under local applications and rest in bed, the symptoms began to subside; she then developed a bronchitis which kept her in bed a little longer and postponed the operation. At the end of the third week from this time, the patient came to the hospital and was operated upon. When the incision was made, there was found no space between the cyst and the abdominal walls, the cyst, being recognized from its color, was determined to be universally adherent. These adhesions were evidently very recent.

The cyst was tapped and then drawn out through the opening and the adhesions separated, as they presented at the incision. As they were of recent development, they were easily separated and without much hemorrhage. The pedicle was twisted at several points. There was a considerable amount of bloody fluid as you would expect inside of the cyst, and the patient was very pallid at first, which was one of the symptoms of her condition, showing that there was a considerable amount of hemorrhage as the result of the twisting of the pedicle. I am satisfied from the condition I found the pedicle in and the amount of adhesions present, that the principal part of the nutrition was carried on through these adhesions. The adhesions were universal and included every important organ, so the cyst got enough to keep up its supply and prevent mortification. It is the second case I have met with in my experience with ovarian cysts. It is not a rare occurrence, but it is important, if possible, to think of the symptoms that will call your attention to its presence. THE JOURNAL OF OBSTETRICS mentions one case, in which a twisted pedicle was followed by such hemorrhage that the cyst was ruptured and the patient died almost immediately from loss of blood.

Sir Spencer Wells mentions a case of a lady who came from Moscow to him for treatment, and who had to stop at Berlin on account of trouble with the pedicle, and when she came to London he operated immediately and found a large amount of blood in the cyst and in the abdominal cavity because of the rupture of the cyst. She finally recovered.

DR. MERRIMAN.—Will the speaker tell us the origin of the blood that is found in the cyst?

DR. PARKES.—I do not know that I can, unless it is that the twist is seldom severe at first and only cuts off the circulation in the veins, but is not sufficient to cut off the supply of blood through the arteries of the pedicle, so that the cyst's capillaries break and flood the cavity of the cyst with blood, leading to its rupture. This is accompanied with sudden distention of the abdomen, so great as to amount to several inches in a few hours.

2. HYSTERECTOMY FOR SOFT MYO-FIBROMA; RECOVERY.

The other specimen I have to show you is a soft fibro-myoma of the uterus, which I removed some four weeks ago. It is a very

fine specimen of that kind of tumor. As you feel it and see it, you will recognize the suspicion that comes to the finger of there being fluctuation in the mass. This was removed from a maiden lady, about 30 years of age, who had suffered a great deal from the size of the tumor and from hemorrhage occurring at the menses proper and in the intervals between, so that she was entirely prevented from following her avocation; besides, the size was so great that she was constantly under the suspicion of being pregnant. When she consulted me, I presented to her what I thought was the true state of the matter, saying that in all probability the removal of the ovaries would stop the trouble that she suffered from, so far as increased flow of blood was concerned. I told her I would either do Battey's operation or, if she was desirous, I would make an attempt to remove the entire mass. After thinking over the matter for a week or so, she concluded to get rid of all of it. She went into the Presbyterian Hospital, and I removed the mass you see. The incision was made down upon the tumor through the abdominal walls, and this tumor, which occupied the abdominal cavity, exposed; it was about the size of a seven months' pregnant uterus; indeed, after I had exposed the mass, there was some doubt whether it might not be a pregnant uterus, notwithstanding the repeated examinations that had been made to determine its nature. When the mass was exposed and turned out of the incision, which was eight to ten inches long, extending half-way between the umbilicus and ensiform cartilage, the broad ligaments were ligatured away from the mass by three sutures; the first and second were placed in any position without reference to the part of broad ligament tied, but the third one was placed with a purpose. It was placed deeply, and included the lateral margins of the uterine tissue. This is an important ligature to apply when an attempt is made to remove the uterus; it always includes the large vessels which pass up the side of the uterus, and prevents hemorrhage when introduced deeply and close to the uterus. We found subsequently that the deeper dissection was not followed by any hemorrhage. That was done on both sides, then a temporary rubber ligature was applied around the uterus as low down as it could be applied without implicating the bladder, the uterus divided above, and the mass removed. After doing that, I took pains to dissect out the mass which was above the rubber ligature—this amount of uterine tissue which you see here—so as to make the stump as small as possible. After that was done, I did what I have previously advocated before this Society, I seized all the raw surface, both of the broad ligaments and the uterus, with the clamp, and cauterized the whole very freely, cauterizing it down to the surface of the clamp, until it was perfectly smooth, and when the clamp was removed there was left a clean, horny substance in the cavity. There was no hemorrhage in the cavity, so complete was the success in securing the vessels. There was a

considerable amount of hemorrhage through the rather patulous cervix into the vagina, which occurred from the uterine surface before it was cauterized, but which proved to be a safety valve for the patient, because, after the operation, there was a slight amount of hemorrhage through the dressing with which the vagina was packed. The patient was put to bed, and, from the record which I have with me, there was only one time when the temperature was at all alarming. On the afternoon of the second day the temperature reached 102° F., after that it never went beyond 100° F., and rarely to 99° F. The patient is now well. The long wound in the abdomen healed up by first intention, with the exception of one place where the sutures were rather poorly applied, and in a second place where the drainage-tube was placed. The mass is made up of the myo-fibroma, situated on the posterior wall of the uterus, and after opening the mass we came on this small, pedunculated tumor inside of the uterus. The tumor has many characteristic points of a fibroid growth. And it is really astonishing the feeling of fluctuation you find in this mass, even after it has been removed and in alcohol so long.

DR. E. W. SAWYER.—There is one point of which I would like to speak, that is, of the fluctuation which can be detected on the palpation of this specimen. It recalls a case I saw a gynecologist in Boston operate upon, which he had decided was a cyst of the broad ligament, but which proved to be a mass on the lateral border of the uterus. The patient died. The fluctuation was very apparent to a number of examiners.

DR. FRANKLIN H. MARTIN made the following remarks upon

APOSTOLI'S METHOD OF ELECTROLYSIS.

I feel somewhat timid in coming before this Society, made up of eminent surgeons, to describe and advocate a method of treatment for fibroid tumors of the uterus which, at best, by the majority of the profession is considered in the light of a temporary expedient.

While there has been, and for good reasons, a great deal of scepticism in the profession in regard to the value of treatment of fibroid tumors of the uterus by electricity, we are able to discern at present a general tendency to investigate its claims and to take advantage of its results. This tendency in the profession to investigate was brought about by the book of Dr. Apostoli, which appeared in 1884. Now, instead of charlatans monopolizing this valuable therapeutic agent, we find men of position in other countries adopting it—Reiman, of Kief; Deletang, of Nantes; Hüe, of Rouen; Adolphe Elsassén, of Stuttgart; William Woodham Webb, of London; Gardner, of Montreal; and in this country Engelmann and Hulbert, of St. Louis; Bartholow and Massy, of Philadelphia; Baker, of Boston; and Skene and Freeman, of Brooklyn.

I wish to confine my remarks this evening to the consideration

of Apostoli's method of treatment of fibroid tumors of the uterus. Dr. Apostoli has done away with the mysterious low current. There is a positiveness about his use of electricity that has never been safely imitated by any other method. The reasons for Dr. Apostoli's success rest upon the following facts:

1. The use of strong currents.
2. Adoption of electrodes that make the use of a strong current possible, without harm to innocent tissues and without pain to the patient.
3. The recognition of the peculiar effects of the two poles and the application of them according to requirements.
4. Accurate measurement of current.
5. Rational discrimination in selection of cases.

By the employment of a strong current, short sittings are made practicable, and definite results are obtained. While the amount of electrolytic work done does not depend upon the strength of current, but upon the quantity, definite polar action depends almost exclusively upon the strength of current.

The electrodes used by Apostoli are in all cases of two varieties, the active or internal electrode, and the passive or external electrode. The active internal electrode is for the purpose of concentrating the current at the point where it is most needed. This electrode may be simply a uterine probe of platinum, insulated to the cervical point, or a sharp needle of iridium, insulated to within an inch or two of its point, which will penetrate the mass of the growth from the cervical canal. The passive or external electrode is for the purpose of completing the circuit in such a manner that the strong current shall pass through the largest diameter of the growth, and at the same time diffuse the current sufficiently to prevent pain.

When it passes through the sensitive integument, Apostoli uses for this purpose a biscuit of clay, moulded upon the abdomen, properly connected with one pole of the battery. For this purpose, I use an electrode of my own device. Over the concave surface of a plate of soft metal is stretched an animal membrane, which is attached to the edges in such a manner as to render the interspace between the membrane and the metal water-tight. This space, which is from one-half to one inch in thickness, is filled with warm water. The membranous surface is applied to the abdomen, and suitable connections made from the metal with one pole of the battery.

The local effect of the negative pole when employed as the active electrode with a strong current is to produce liquefaction of the tumor with which it comes in contact, and is compared to the effect of a caustic alkali. In fact, it is called and is the alkaline pole. This pole, therefore, on account of its effect of rapid solution of tumors, is employed to reduce the size of these abnormal growths.

The local effect of the positive pole when employed as the active electrode, with a strong current, is to produce coagulation and condensation of the tumor with which it comes in contact, and is compared to a caustic acid. It is the acid pole. The coagulating effect of this pole is utilized with marked advantage in controlling the hemorrhages caused by fibroid tumors. Whenever the entire cavity of a bleeding wound can be reached with the positive pole of a sufficiently powerful battery by means of an electrode of platinum, the hemorrhage can surely be checked.

When a current of sufficient strength is employed to obtain the characteristic effects of the electrodes, as described above, in order to be of value in the treatment of fibroid tumors, a current of from fifty to one thousand milliamperes is necessary. A current of this strength should never be used without proper means of measurement at hand. The strength of the current employed should be varied with the work to be accomplished and the extent of active surface of the internal electrode in contact with tissues to be acted upon.

This scheme of treatment, which I have not been able in the time allotted to more than suggest, is capable of producing rapid and beneficial results. The most distressing hemorrhages can be permanently checked by the coagulating effect of the positive electrode; the most excruciating neuralgic pains, so often accompanying fibroid growths of the uterus, are almost invariably relieved; the smaller tumors are removed entirely, and the large ones rapidly reduced in size by the local effect of the negative pole and the electrolytic and cataphoric action of the current passing through the growth.

The method is free from danger if properly employed. I have yet to see an untoward symptom arise from its use. Its use is accomplished without producing pain enough to require an anesthetic. The applications are best made in the office.

THE PRESIDENT.—I had the pleasure of seeing Dr. Apostoli when I was in Paris, and he seemed to be a very conscientious and patient worker. He takes great pains to explain his method to any one who appears interested, and I am not surprised to hear his work alluded to by the speaker in enthusiastic terms.

DR. DANIEL T. NELSON.—One thing I would like to have the doctor explain is, whether from the cauterization there may be septic absorption; whether he has seen anything to lead him to fear septic material formed thus in the interior of the uterus and absorption from it which might be serious. I am very much interested in the doctor's plan of treatment. As the Fellows of the Society perhaps know, I have been and am still working in another direction, and will be very much obliged to any one who will report to me their success with ergot. It seems to me there are certain cases that would be better treated by one plan of treatment than another. For example, this specimen that Dr. Parkes has shown us, it seems to me, could hardly have been satisfactorily treated except as it was, unless the growth might have been stopped by the removal of the ovaries. I believe the treat-

ment adopted was the best. Whether there are certain forms of fibroid tumor that can be better treated by ergot and others by electricity is what I do not know, and am anxious to find out, and I hope we shall have reports of the progress of the work in that direction.

DR. FRANKLIN H. MARTIN.—In answer to Dr. Nelson's question whether I have noticed septic resorption, I desire to say I have not.

The probes and instruments used in the operation are thoroughly sterilized; the probe is passed through flame, and the rubber used about the insulator is made thoroughly aseptic. I have a number of cases which certainly would be of interest to this Society, but I have purposely reserved them, because I expect to make a report later.

In the cases I have seen of a hemorrhagic nature, the hemorrhage has been checked. I have not seen a tumor that has not been materially reduced in size from a third to a half, and even two-thirds. I have seen three or four cases in which the tumor has entirely disappeared, and, as far as I was able to judge, the uterus was decreased to normal.

DR. NELSON.—What were the dimensions of these tumors?

DR. MARTIN.—The tumors I speak of now were small, from the size of an apple to that of a cocoanut. The treatment has a very decided and rapid effect in reducing the size of the tumor. In regard to the menstruation; in two cases that I have seen, the menstruation was entirely checked; in one or two others a very slight show at the menstrual period was noticed. I have not seen sloughing enough to stop the progress of the treatment.

THE PRESIDENT presented, in abstract, a paper entitled

ONE FACTOR IN THE ETIOLOGY, ONE MEANS OF CURE IN PUERPERAL FEVER.

(Retained débris, placental tissue, and membranes *the cause*, the intrauterine douche and curette *the cure*.)

The question was regarded as one of the most important which we can consider, inasmuch as the mortality from puerperal disease was believed by the author to be larger than the majority of physicians admit. Many of the so-called malarial fevers and diseases ascribed to sewer gas taking place in puerperal patients were in all probability some form of puerperal fever. It was not regarded profitable by the speaker to allude to theories advanced by different authorities previous to the promulgation of the Semmelweis doctrine (1847): but as showing the change in thought which is constantly taking place, he reviewed briefly the "confession of faith" by Fordyce Barker, and some of the opinions of Lusk.

The ideas in regard to autosepsis, as expressed by Parvin, were believed to be more fully in accord with advanced German thought than any hitherto published by any American authors.

Barnes (1885) was evidently not a believer in the germ theory of puerperal diseases, and describes rather fully what he calls "excretory puerperal fever."

Galabin (1886) says that the first possible internal cause of poison is the blood itself; but in his Hunterian oration, delivered recently, and published in the *British Medical Journal* as late as April 30th the present year, he says: "The old division of puerperal fever into the autogenetic and heterogenetic class must clearly be regarded as a less radical and scientific division when it is remembered that in every case of true traumatic infective disease the microbes or their germs must come from without."

Coming to examine the teachings of continental authorities, Dr. Earle said that, in answer to his question in regard to the possibility of recovery after many different obstetrical operations, the answer was: "She will get well if I have not infected her." Fritsch (quoted from Parvin) says: "To admit the existence of a spontaneous infection is to take a long step backward."

As a most important contribution to our knowledge in regard to micro-organisms and their relation to sepsis, the recent experiments of Geo. Klemperer and Hauser, of Erlangen, were referred to by Dr. Earle. All these arguments and investigations go to prove that autogenetic poison is well-nigh impossible, and if puerperal fever follows where it is suspected that small pieces of placenta or membranes are yet in the uterus, it is fair to suppose that infection has taken place from the outside.

If then, some cases of puerperal fever are caused by débris which has in some way been infected, it was clear, in the essayist's mind, that the sooner the uterus was cleared of the decomposing material the better.

It appeared to him that the first explosion took place in many cases about the fourth day, and then on the seventh or eighth.

The method adopted by the speaker is substantially the one used in Vienna. Both the intrauterine injection and curetting are performed with all antiseptic precautions. The external parts and vagina are very carefully washed, and then with a large glass-tube (the small metallic ones were believed to be inadequate) administer a large intrauterine douche.

The operation is concluded by the insertion of a suppository of iodoform containing from fifty to seventy-five grains. A coil is frequently placed on the abdomen to assist in the reduction of temperature, which, however, frequently comes down in a very short time without it.

In some cases the intrauterine douche is all that is necessary to reduce the temperature, and the patient goes on to a safe puerperal convalescence. In others, either the temperature does not go down, or after its reduction goes again to an alarming height. If this cannot be accounted for by the discovery of some hardening or by some local inflammation, it was now time for the curette. With the same precautions, even to the intrauterine douche before the use of the instrument, the cavity of the uterus is carefully curetted, with frequently the withdrawal of a most

astonishing amount of placental tissue; a second douche into the cavity is now given, and then the iodoform.

These operations have been performed in several cases where the temperature was found to be 104° and $105\frac{1}{4}^{\circ}$ F. Just the indication and contra-indication for the operations the doctor did not suggest, as this paper was simply preliminary, although it seemed that the time for the intrauterine douche was very soon after the high temperature, and the time for the curette as soon after as it is found that the douche has not caused the reduction of the high fever. It appeared to the president that the time had come when the results of antiseptic obstetrics should be promulgated to the general profession, and while many would refuse to believe the most advanced theories, and some, perhaps, theories absolutely demonstrated, the influence would be good. If thorough antisepsis in obstetrics cannot be adopted, the practitioner can be clean himself, can see to it that his nurse (many of them untrained and thoroughly ignorant of even cleanliness) does not introduce the germs of puerperal fever, and that the same bedding is not used or the room occupied in which cases of diphtheria or other infectious diseases have recently been treated.

DR. W. W. JAGGARD.—I regret that the author of the paper has attempted to discuss the whole subject of the causation of child-bed fever. I came this evening expecting, from the programme, to hear his views on the curettement of the puerperal uterus in cases of sepsis.

I am under the conviction that the Semmelweiss doctrine of the etiology of puerperal fever has been demonstrated in all essential details, and I am not willing to enter into a discussion with those who do not admit this proposition. It is folly to consume valuable time in the discussion of a subject, the nature of which has been so fully demonstrated, and in regard to which there is such absolute unanimity of all professional opinion entitled to serious consideration.

It is my intention to make a few criticisms upon the president's remarks on curettement of the puerperal uterus in cases of sepsis. I hope I shall be pardoned for speaking very plainly.

1. Dr. Earle's statements with reference to the conditions and indications for the operation are vague and general in the extreme. "The time for the intrauterine douche is very soon after the high temperature, and the time for the curette as soon after as it is found that the douche has not caused the reduction of the high fever." Dr. Earle refers, of course, to a method of treatment employed particularly by Carl Braun during the last two or three years. It is only fair to state correctly the conditions and indications under which Braun performs this operation.

Carl Braun¹ says distinctly that, as an essential condition, the uterus must be well contracted. Now, as remarked by Kucher, a well-contracted uterus is almost proof against infection.

Braun states explicitly that the indication for curettement exists when there is evidence that the puerperal uterus is sep-

¹ Beilage zu No. 35 der Wiener Medizinischen Wochenschrift, 1886, p. 1,222.

tically infected and contains putrid tissue, not merely when there is evidence of puerperal sepsis in general.

The site of primary infection is usually the vulva, vagina, or vaginal portion of the uterus, and these regions of the genital tract, more exposed to injury and infection, demand attention before the uterine cavity itself is approached. The cases are comparatively few in which infection begins in the *cavum uteri* from retained decomposing matter.

Normally, Friedländer's glandular layer of the decidua is retained. Credé, among others, has for years raised a voice of warning against meddlesome searches after fragments of retained membranes, and minute blood clots. Says he,¹ even in the event of retention of the entire chorion, I have refrained, for a long series of years, from instituting any artificial procedures, because experience has taught me that nature, alone, sometimes more rapidly, sometimes more slowly, harmlessly removes these fragments. So long as these structures are not infected, there is no danger of sepsis. When infected, a firmly contracted uterus is usually sufficient to prevent the access of the poison to the veins and lymphatics. Permit me to attempt to translate a paragraph from Credé's last important monograph, that is a trifle vigorous.² "In Mecklenburg, the people say: 'A woman in childbed must stink herself out.' This is a harsh, but an apposite saying. Let him who prefers a finer mode of speech say: 'Nature must cleanse and evacuate the parturient passages of the puerperal woman, and, during this process, the puerperal woman does not exhale agreeable odors.' This is an extremely simple process, similar to, but not easier or simpler than the evacuation of the rectum, during which process the average mortal does not emit agreeable odors, but still is in perfectly sound health. The genital track possesses a more powerful musculature than the rectum, and wide open excretory ducts, while the rectum must open and conquer the sphincter of the anus. Even foully smelling secretions do not poison, if only their normal dejection is not disturbed."

Mere elevation of temperature, in the absence of corresponding changes in the force and frequency of the heart's action, the patient's general and local condition, is not a pathognomonic sign of puerperal sepsis. The pulse is frequently of greater prognostic moment than the temperature.

2. The dangers of curettement of the puerperal uterus are serious, and not always avoidable, even immediately after labor, but they are especially grave during the lying-in period, after the formation of thrombi in the placental veins. A thrombus may be dislodged, the muscular walls injured or perforated, fresh fields for infection opened up. The degree of technical skill required for the adequate performance of the operation is higher than that to which the average operator can justly lay claim.

3. Dr. Earle's cases, three in number, with one fatal termination, are not sufficient to add to, or detract from, the value of the method.

In conclusion, I desire to be understood, not as criticising the Vienna practice, but as condemning the performance of this

¹ "Gesunde und kranke Wöchnerinnen," Leipzig, 1886, p. 17.

² Op. cit., pp. 93, 94.

difficult and dangerous operation, without respect to conditions, and in the absence of perfectly clear and distinct indications.

DR. CHRISTIAN FENGER.—Like Dr. Jaggard, I am very glad that this important subject has been brought up. I have nothing to say as to the curetting of the puerperal uterus, but from a general point of view, I would like to make a few remarks. It is to outsiders, as far as obstetrics is concerned, a most remarkable thing to see the change in the lying-in hospitals, which formerly, in large cities, were the most dangerous places of all, but have now become even more safe than private houses. A few days ago, I saw the report of the Lying-in-Hospital at Dresden, by Prof. Leopold, for three successive years. The first year, with antiseptic precautions, reasonably aseptic obstetrics was practised and the mortality was one per cent. In the second year, the mortality came down to two-tenths of one per cent, and in the third year to .0014 of one per cent, which means that out of 10,000 women only 14 had sepsis. I received a letter from Dr. Senna a few days ago, written from Strassburg. He says that four or five years ago, a new lying-in hospital was built there, under the direction of Prof. Freund, with all modern appliances and precautions. There is an isolated house for all women with septicemia that are brought in. No septic women are brought into the lying-in hospital proper, where for several years there have been no cases of infection. He spoke to Koch about the unexplained final cause of septicemia—we do not know why the same microbes in so many cases do not produce a fatal septicemia and in other cases do. Koch replied, "Well, I hardly think we will ever get that question solved here in Germany, because septicemia has been exterminated." As to the point made by Dr. Earle in regard to disinfecting the hands, I have heard it said that it was almost impossible to get the hands disinfected. Two years ago, in 1885, a paper was read before the German Surgical Association by Kümmel, of Hamburg, giving, besides other investigations, the results of experiments in disinfecting the hands. The experimenter came from the dead-house where he had made a post-mortem examination in a case of septic peritonitis, handling the contents of the abdomen, the infected sponges, etc., repeatedly. And he found that when his hands were washed and brushed with a nailbrush for ten minutes in warm water and soap, (I do not know whether it makes much difference if we use soft soap or common hard soap) and afterwards washed and brushed in a five-per-cent solution of carbolic acid or 1:1,000 corrosive sublimate, they were perfectly aseptic.

DR. PHILIP ADOLPHUS.—*The immediate removal of retained decidua after parturition* is of more importance to the patient than the manner of doing it, or the instruments with which the operation is performed. It should be held as an established principle that hemorrhage or symptoms of septicemia after abortion, premature labor, or labor at term require the *immediate emptying of the uterus*, if the bleeding is caused by the retention of decidua.

Many cases of abortion are not seen until repeated hemorrhages have occurred or septicemia has developed. In other cases, we arrive after the ovum has been discharged and thrown away.

Again, by the retention of pieces of placenta, a polypoid intra-uterine growth has been formed, or retained clots, produced by oozing after delivery, have become compressed and condensed within the cavity and taken its shape.

However, the history of the case, the enlarged tender uterus, the intermittent hemorrhages, and symptoms of septicæmia, if they are present, point unerringly to the diagnosis of retention.

Therefore, it is good practice, when delivering the placenta and membranes, to examine them carefully, in order to convince ourselves that they have been thoroughly removed. It is not always possible to remove the placenta; uterus and placenta are sometimes so intimately united by inflammation that post-mortem investigation fails to separate the organs. Portions of the placenta are therefore of necessity left adherent to the uterus.

For the removal of an adherent placenta during parturition, the hand, the finger, and its nail are the best aids; all steel instruments are out of place. For the removal of retained portions of the placenta after parturition, which could not be brought away at the time of delivery, owing to adhesions, the finger is again the best instrument. They should be removed before decomposition and acrid discharges take place, and symptoms of septicæmia and metritis intervene. These should be preceded and followed by repeated injections of a corrosive sublimate solution 1 in 3,000.

The cervix should be dilated by tupelo tents in all cases of retention, whenever it is necessary. Anesthetics are administered when tenderness and inflammation exist, or when otherwise indicated.

It is not expedient to depend on any special instrument or mode of procedure. It is best in most cases to place the woman in the dorsal position, as for the operation of laceration of the perineum, and to introduce a retractor, the cervix being held by a vulsellum, and the uterus depressed by the hand of an assistant; the contents of the uterus are then removed by finger, curette, or forceps. By this mode touch is also aided by sight, which certainly is a matter of great importance.

Usually, the removal of the secundines after delivery at term, or before the internal os closes—which is generally limited to a period of twelve days after delivery—should be preferably made by the hands or fingers.

The wire curette and forceps are of great use in delivering the decidua after abortion. These instruments can be guided by the finger into the uterus. A Sims retractor will render the manipulation easier and safer.

Repeated and methodical use of antiseptic uterine injections by double canula—when the os is patulous—are required for the safety of the patient in all cases.

DR. EDWARD WARREN SAWYER.—Trivial circumstances sometimes create a fashion for practice in all departments of medicine, and it is more than likely that this paper will have such influence as to make it fashionable for people to scrape the interior of the puerperal uterus. With all deference to the distinguished author of the paper, but out of consideration to the large class of child-bearing women, I sincerely hope great circumspection and long meditation will precede the operation. I have enjoyed a comfortable sort of practice in obstetrics for thirteen years in this city, have had the usual number that comes to a man in a populous district, and I can say with strict honesty that I have never yet seen a puerperal woman, in my own practice or that of another, when I thought it necessary to scrape the interior of the uterus. From the President's paper and the discussion that has followed, I am led to think that some carelessness has been used in the expo-

sition of the indications for this operation. For example, the indications incident to abortion and those in the parturient woman. I believe the greatest distinction exists in reference to these two classes of cases. I think we are all of the opinion that in abortion the uterus should be emptied and the curette employed if necessary, but the conditions are dissimilar in the parturient woman.

In the former case, the membranes of the ovum are firmly united to the uterine substance by a real tissue connection, which the scraping instrument is often needed to break up; while in the parturient subject a degeneration of this connecting substance has taken place, a real line of demarcation formed, incident to term, and nature completes the detachment in safety. I do not know how it is possible to make the examination so as to assure ourselves that some part of the membrane has not been left. I do not give uterine injections habitually, though I do give vaginal injections without exception. I have never seen a high temperature that I thought was incident to any remnants left in the uterus, and I did not think that curetting was ever justifiable. I have more than once encountered the extrusion of a cotyledon, twenty-four or thirty-six hours after delivery, without occasioning any discomfort to the patient. I sincerely hope that scraping the uterus will not be frequently done. I look upon it as a hazardous operation that cannot be performed by the ordinary practitioner. If left to the skilled man, I am sure the skill will be governed in a way that will not lead him to dangerous meddling with natural processes.

DR. H. T. BYFORD.—One point ought to be touched upon a little more, that is, about the instrument used. To recommend Sims' instrument to the average young practitioner is to put a murderous instrument in his hands. In the case of an abortion, in which the uterus is not developed more than three or four months, or of labor at term, when the os is dilatable, there is no doubt but the finger is the best curette, because it can reach all the parts and get away all adherent tissue. But when we get a contracted uterus at full term, we cannot always thus reach the fundus and may require an instrument. If this curette is used when the uterus is relaxed, it is liable to perforate the walls; if used when the uterus is contracted, it will remove without distinction adherent placenta and adjacent corrugated portions of the uterine wall. I have studied this subject a great deal, and have had a curette constructed that will rub off the adherent patches without cutting, just as the finger does. If the uterus is pretty well contracted, there is no harm in using some force upon its surface with a dull instrument—the friable particles will come off and the firm uterine tissue remain uninjured. Such a curette may be put into the hands of the general practitioner, who will be the one to find cases requiring its use.

DR. EARLE.—I have in this bottle the result of an intrauterine douche followed by curetting. The placenta that came away was placed together, put under the hydrant, and washed out and carefully inspected by two medical men, yet at the end of three days the temperature was $104\frac{1}{2}^{\circ}$ F., which rapidly became normal after the operation and removal of the two or three drachms of debris.

DR. ADOLPHUS.—How often do you get a temperature of $104\frac{1}{2}^{\circ}$ F.?

DR. EARLE.—In my own practice rarely—probably two or three times during the past six months. In consultations, during that

time for all classes of puerperal diseases, the temperature has been found high (from $103\frac{1}{2}^{\circ}$ F. to $105\frac{1}{4}^{\circ}$ F.) in some twelve cases.

I have not time at this late hour to answer many of the criticisms. I am, however, very much obliged for them. This paper is simply introductory, for I hope, as time goes on and occasion offers, to present other papers in regard to this subject, which I believe to be one of the most important we can possibly consider. In my judgment, my friend, Dr. Jaggard, is greatly mistaken when he says that a *large majority* of American practitioners believe in regard to puerperal fever, and practise as if they believed the theory advocated by Semmelweiss. This subject was brought up in the State Society during the present week, and some of the oldest members of the Society were perfectly insane over the idea of puerperal fever being caused in the ordinary way of infection. This paper is in the line of trying to influence the great bulk of practitioners and obstetricians who do not realize one-tenth part of the arguments that are advanced in regard to even making the hands aseptic in obstetric practice. I will guarantee that not fifty per cent of general obstetricians wash their hands before making an examination; they simply smear their hands with lard or soap and make the examination. In reply to a question by Dr. Sawyer, Dr. Earle stated that one of the cases mentioned in his paper as having high temperature, high pulse, and peritonitis, died the night of the operation. A very considerable amount was removed, and there was little doubt as to how she received puerperal infection, but the *débris* had been allowed to remain for such a period that the system was entirely invaded: a system already poisoned was again and again attacked by the same poison.

REVIEWS.

ABDOMINAL SURGERY. By J. GREIG SMITH, M.A., F.R.S.E., Surgeon to the Bristol Royal Infirmary, etc. Philadelphia: P. Blakiston, Son & Co., 1887, pp. 606.

This is a laudable and successful attempt to gather within the scope of a single volume the surgical operations which may be performed on the abdominal viscera, and the time is certainly ripe for such an attempt, for the minds and hands of surgeons the world over are so busy nowadays devising and testing new methods, that it is a comfort to the inexperienced as well as to the expert to be spared the time and trouble requisite for studying such methods, scattered as they are chiefly in monographs and special medical journals. The writer further is eminently fitted for the task, for he has stated facts, as far as possible shorn of all theory, and he brings to bear an eminently judicial mind on the estimation of the value of different methods which aim at the same result. In his writing, he has kept ever before him the fact that "it is expedient that the surgeon who makes an abdominal section for a certain pre-conceived purpose should be ready off hand to deal with an unexpected contingency. The recondite nature of many abdominal

diseases frequently necessitates conclusions to operative procedures very different from what were contemplated. Confidence and capacity on the part of the surgeon who ventures on abdominal work can scarcely exist apart from a complete knowledge of all abdominal operations." This work, then, is not alone one to learn from, but one to resort to preparatory to the performance of some abdominal operation for the purpose of refreshing the mind in regard to the technique and also for the purpose of impressing on the mind the difficulties which may be met with and the manner of circumventing them.

The scheme of the work is eminently logical. The opening pages are devoted to a succinct account of the methods applicable to the diagnosis of abdominal tumors, and to the special features of abdominal surgical methods in general, and the after-treatment of cases of abdominal operation. The various surgical procedures applicable to the pelvic and abdominal organs are next discussed, including those on the gravid uterus and for ectopic gestation. The main purpose of the writer being to describe the operations, he has omitted reference to histological and pathological points, except where they seemed requisite, and he has not burdened his pages with statistics. A sketch of the history and progress of each operation precedes it, as well as a clear, condensed statement of the anatomy of the organ involved in the operation.

Further comment on the work is uncalled for. It was needed, and it will not be found lacking either in instruction or information.

E. H. G.

LA PRATIQUE OBSTÉTRICALE. MANŒUVRES ET OPERATIONS À L'AMPHITHÉÂTRE.—PRACTICAL OBSTETRICS, ETC. By DR. CROUZAT, Quiz-master in Obstetrics at the Faculté de Médecine de Paris, etc. Paris: A. Delahaye et E. Lecrosnier, 1887, pp. 288, Figs. 75.

A condensed account of the elements of obstetrics, followed by a description of the ordinary operations—such are the contents of this little work. It represents purely the teachings of the French school, and was prepared especially to serve as a guide to the students enrolled in the course of operative obstetrics, in which respect it will subserve its purpose very well.

E. H. G.

HEMORRHAGIES UTERINES, ÉTIOLOGIE, DIAGNOSTIC, TRAITEMENT.—UTERINE HEMORRHAGES, THEIR ETIOLOGY, DIAGNOSIS, AND TREATMENT. By DR. SNEGUIREFF, Professor of Gynecology at the Imperial University of Moscow. French edition, translated by M. H. VARNIER, Interne of the Paris hospitals, under the supervision of DR. PINARD, Adjunct Professor of the Paris Faculté, etc. Paris: G. Steinheil, 1886, pp. 276.

This work constitutes a study of the causes and treatment of the hemorrhages from the female genital organs, as well from an obstetrical as a gynecological standpoint, exclusive of those which result from vicious insertion of the placenta. It is introduced to the medical profession by an extremely laudatory preface written by Professor Pinard, and we freely grant that the work is one of considerable merit. We cannot quite comprehend, however, why the author should have chosen the title which he has. Many conditions are described by him where hemorrhage is the chief symptom and fairly constant accompaniment, such as can-

cer and fibromyomata, but then others, such as anteflexion, retro-position, congenital cervical flexure, are not necessarily associated with this symptom at all, indeed congenital flexion with conical cervix is often met with together with lack of development of the sexual organs, and amenorrhea, or else very scanty menstruation are the accompaniments, and not hemorrhage. This criticism, however, does not impair the value of the author's writing.

The work consists of five parts, the first being devoted to a consideration of general diagnostic measures, the second to the etiology of uterine hemorrhages, the third to diagnosis of the causes of these hemorrhages, the fourth to the treatment of menorrhagia in general, and the fifth to the treatment of the different affections which cause menorrhagia. The author has the art of expressing his meaning in a few words and his teaching is ever directly to the point; in places, indeed, he errs on the wrong side, for often more amplification of the subject-matter would seem called for. Here and there throughout the work methods are advocated or we meet with statements which we cannot quite approve, but these are points in dispute and therefore are not strictly open to criticism, with the single exception of the direction given that a woman wearing a pessary should be examined every two days—a direction in regard to which there is scope for but one opinion.

Altogether the work impresses us favorably, and yet it should be stated that it contains absolutely nothing which may not be found to better advantage in the majority of our modern treatises on the diseases of women.

E. H. G.

ABSTRACTS.

1. Weiss: Porro Operation on Account of Cicatricial Contraction of the Vagina (*Archiv f. Gyn.*, XXVIII., 1).—The reported case is of interest, in particular, because of the unusual indication for the Cesarean section. The child was saved and the mother recovered. E. H. G.

2. a. Leopold: Eight Additional Cesarean Sections (five after Saenger's Method), and three Porro Operations. All successful (*Arch. f. Gyn.*, XXVIII., 1).

b. Skutsch: Cesarean Section with Uterine Suture. Success (*Ibid.*)

c. Crede: Two Additional Cesarean Sections after Saenger (*Ibid.*).

d. Freudenberg: Theoretical and Critical Contributions to the Subject of the Cesarean Section (*Ibid.*, XXVIII., 2).

e. Krukenberg: A Contribution to the Subject of the Cesarean Section (*Ibid.*, XXVIII., 3).

The above papers evidence the great interest which the modified Cesarean section is awakening in Germany, and the results reported point clearly to the fact that at last a safe method of uterine suture has been devised. In Credé's paper are recorded 15 cases operated on after Saenger's method, making with the 11 which Saenger himself tabulated in the

Archiv (XXVII., 2), a total of 26 from which to deduce statistical data. The results for the mothers are :

Recovery in 19 cases (76%).

Death in 7 cases (24%).

Results for the children:

Extracted alive 23 (88.4%).

Extracted dead 3 (11.6%).

In one case (Oberg's), in addition to a living child, a macerated fetus was extracted.

In the seven cases where the mother died, in three sepsis was present before the operation; in two cases infection occurred during the operation in women who were already in a very critical condition; in two cases the women died of complicating diseases, not the result of the operation; in three of the fatal cases the result was unquestionably due to the fact that operation was resorted to tardily. (These cases belong to the United States, and such will ever be the result until our experience in the operation has been ample enough to give us the courage to resort to it in time. Of the remaining four fatal cases, not one can be laid to the operation itself.

The twenty-six cases must be divided into two groups: 10 cases of Leopold, 90% maternal recoveries, and all the children saved: 6 cases from the Leipzig clinic (4 operated on by Saenger, 1 each by Obermann and Donat), with no death of either mother or child. Thus, out of 16 cases, 93.7% of the mothers recovered and all the children.

In the face of all these results, Credé justly says that Porro's mutilating operation should be strictly reserved for very exceptional cases.

In Freudenberg's paper will be found analyzed twenty-one cases of Cesarean section which have been performed at the Cologne clinic by Birnbaum (with a single exception). In all the cases but one, where the uterine wound was not sutured, catgut was used. 76% of the mothers were lost (16 out of the 21). The causes of death were peritonitis (9); shock (2), collapse, acute sepsis, anemia, embolism, pneumonia, 1 each. (These cases, not performed by Saenger's method, speak in its favor strongly when compared with the statistics in Credé's paper, where the method was followed).

Krukenberg reports at length three cases of Cesarean section, one Porro, *in extremis*, one case with symperitoneal suture, death immediately after operation, one with same suture and recovery. He then discusses at length with illustrative cases and literature references, the behavior of the uterine cicatrix in subsequent pregnancies, under the following subdivisions: 1. Cases in which the cicatrix yielded and allowed the partial or entire escape of the fetus into the abdominal cavity, 13 in number; 2. Cases in which the cicatrix simply yielded, the fetus remaining in the uterus, 5 in number, with 4 deaths following on either section or delivery by vagina, only 1 patient surviving (section); 3. Cases in which the uterus ruptured, but not at the cicatrix, 4 in number; 4. Cases where the exact rupture site was doubtful, 3 in number; 5. Cases in which extrauterine pregnancy occurred, 2 in number.

As a general conclusion, it may be stated as approximately correct that the uterus ruptures in fifty per cent of the cases where, at the previous operation, uterine suture was not resorted to. K. could find no

case on record where rupture occurred when the uterine suture had been applied.

E. H. G.

3. P. Budin: The Treatment of Retained Placenta after Miscarriage (*Progrès Médical*, 1887).—The author is opposed to the immediate removal of the secundines after miscarriage, and favors expectancy and antiseptics. He has carefully analyzed two hundred and ten cases of miscarriage, in forty-six of which there was retention, and in only one did death occur, the cause being obscure, untoward sequelæ of any sort being extremely rare. He endeavors to prove, in the first place, that retention of the placenta after miscarriage is not the source of frequent accidents where the management is aseptic, and in the second place, that manual and instrumental means of removal are often followed by accidents, whilst some are ineffective and others dangerous. In consequence, he is satisfied with ordering antiseptic injections twice or thrice daily until the placenta is spontaneously expelled, and if symptoms of infection develop, with resorting to antiseptic intrauterine injections. [This subject has been so frequently discussed in the pages of this JOURNAL that it is unnecessary to oppose these views. Further experience with the immediate removal of the secundines, and the knowledge of cases where nature has been waited upon and failed, simply have tended to confirm our own belief in the absolute safety of skilled immediate removal, and of its great advantage to the woman.]

E. H. G.

4. Engel: Labor in a Case of Duplication of the Genital Organs, the Bladder, and the Urethra (*Archiv f. Gyn.*, XXIX., 1).—This case is of peculiar interest in that it is the only one of the kind on record. In addition to the duplication of the genito-urinary organs, the symphysis pubis was lacking. Labor progressed normally, and immediately after, the left uterus was found retroverted and enlarged to the size of the gravid organ at the second month; from the left vagina there was no discharge; the right os externum was open and lacerated, and the right uterus occupied the mid-line. The puerperium was in every respect normal. On the fifth and sixth day a slight amount of what was apparently menstrual blood escaped from the left vagina. The right bladder emptied itself spontaneously; the left had to be catheterized twice daily. The patient was most carefully examined eight months after delivery, and E. again satisfied himself that there existed complete duplicature of the uterus, cervix, vagina, bladder, and urethra, the entrances to the vagina being covered by a pendulous growth, probably the result of adhesive union between the two minor labia majora. The appearance of the external genitals is well shown in a woodcut.

E. H. G.

5. Schatz: Ulcers of the Bladder (*Archiv f. Gyn.*, XXIX., 1).—A number of interesting cases are recorded, in one of which S. resorted to resection of a portion of the bladder. He opened the organ through the linea alba and found the ulcer on the posterior vesical wall. He lifted the fold, on which the ulcer was seated, upwards, clamped it and sutured the base. The hemorrhage was so profuse that he was obliged to insert a second row of sutures. Silk was the suture material. The incision in the anterior vesical wall was united by chromic gut to just

above the symphysis, where an opening was left through which the ends of the silk sutures were passed, and a drain was inserted. The patient convalesced slowly.

E. H. G.

ITEMS.

1. THE next meeting of the AMERICAN GYNECOLOGICAL SOCIETY will be held at the Academy of Medicine, No. 12 West 31st street, in the city of New York, on Tuesday, Wednesday, and Thursday, September 13th, 14th, and 15th. The following distinguished foreign obstetricians and gynecologists have accepted the invitation of the Society, and expect to be present at the meetings: Leishman, (Glasgow), Kidd (Dublin), Gusserow, A. Martin (Berlin), Ménière, Apostoli (Paris), Lefour (Bordeaux), Barbour, Croom (Edinburgh), Kinkead (Galway), Lloyd Roberts (Manchester), Imlach (Liverpool), Edis, Hewitt, Galabin, Bantock (London), Cordes (Geneva). There are forty-four vacancies in the list of Fellows which number the Society hopes to diminish greatly at the coming meeting. (The limit of Fellows is one hundred.) Applications, indorsed by two Fellows, with the paper required by the By-Laws, should be sent to the Secretary, Dr. Joseph Taber Johnson, 926 Farragut Square, Washington, D. C., *one month before the first day of the meeting.*

2. PROF. OLSHAUSEN has been elected President of the Berlin Obstetrical Society.

3. PROF. LUDWIG BANDL has been accorded the right to deliver lectures at the University of Vienna, he having retired from the chair of Obstetrics and Gynecology at Prague, to which he was appointed last year.

4. DR. EHRENDORFER, late assistant to Prof. Spaeth in Vienna, has been appointed to the chair of Obstetrics at Innsbruck.

5. PROF. ESMARCH, of Kiel (not Erichsen, as one of our city contemporaries recently stated), whose wife is a princess of the royal house of Prussia, has been raised to the nobility.

6. DR. PAWLIK, of Vienna, well known through his experiments on the sounding of the normal ureter, has been appointed Professor of Obstetrics and Gynecology at the Czech Faculty at Prague.

7. DR. J. BRAXTON HICKS has accepted the appointment as Professor of Obstetrics at St. Mary's Hospital, rendered vacant by the death of Dr. Alfred Meadows.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] SEPTEMBER, 1887. [No. 9.

ORIGINAL COMMUNICATIONS.

THE DIFFERENTIAL DIAGNOSIS BETWEEN FUNGOUS ENDO-
METRITIS AND TUMORS OF THE MUCOSA OF THE
UTERUS.

BY

LOUIS HEITZMANN, M.D.,
New York.

With 10 Illustrations.

WHENEVER the surgeon, owing to hemorrhages from the uterus, in women somewhat advanced in age, suspects a pathological process in the uterus, he will first resort to the application of the sound. On finding the surface of the mucosa irregular, nodular, or hilly, he is at once in the position to diagnosticate a morbid process in the same. In order to clear up the nature of this process, he often resorts to the scoop, and shreds thus obtained become subject of microscopical research. The future action of the surgeon, as well as the prognosis in the case, depend largely upon the result of the microscopical examination. The prognosis will be ascertained, even in such cases, where the surgeon, confident of his diagnosis, tries to remove all morbid products at once. A favorable prognosis may be made, or a permanent cure promised, in all cases in which the microscope reveals the presence of a mere hyperplasia of the uterine mucosa, as the result of a chronic, plastic, or fungous endometritis, even

though repeated operations be required. On the contrary, as soon as the diagnosis of a sarcoma (myeloma) or a cancer is established, the prognosis will be unfavorable. Whereas the diagnosis of an incipient cancer is, in most cases, easily made, the diagnosis of a sarcoma, at least in its earliest stages, has been a matter of little certainty, largely depending upon the personal experience both of the microscopist and the surgeon.

During several years past, I have come into possession of a number of specimens of shreds scooped out from the uterine cavity *in vivo*, and I tried to find out the points of difference regarding the nature of different outgrowths of the uterine mucosa. The material was obtained partly through the kindness of several gynecologists, and partly from the material at the disposal of the Institution of Morbid Anatomy in Vienna, Austria, where I have spent several months. The specimens were placed either in a dilute chromic acid solution or in alcohol, soon after removal, and, having been imbedded in celloidin, were cut up in the usual way. The mounting was done partly in glycerin and partly in Canada balsam.

I. *Fungous Endometritis.*

Since Robert¹ and Récamier² have first drawn attention to this not very rare disease, and Olshausen,³ of more recent date, has carefully studied its pathology, its diagnosis is thoroughly established. It seems to have escaped such a careful observer as Rokitansky,⁴ who simply mentions hypertrophy of the uterine mucosa, caused by chronic endometritis, as a common cause of polypoid tumors thereof. J. J. Bischoff⁵ finds it necessary to describe four "anatomically distinct" forms of the disease, but the result is an almost hopeless confusion. Fritsch⁶ most carefully describes its pathological features. The disease has also been made the subject of study by Rouyer, Nelaton, Trouseau, Goldschmidt, and many others.

¹ Bulletin thérapeutique, 1846, page 344.

² Union médicale de Paris, Juin, 1850.

³ "Ueber chronische hyperplasirende Endometritis des Corpus Uteri." Archiv für Gynäkologie, vol. 8, page 97.

⁴ "Lehrbuch der pathologischen Anatomie," vol. 3.

⁵ "Die sogenannte Endometritis fungosa." Correspondenzblatt für schweizer Aerzte, 1878, page 481.

⁶ Billroth-Luecke, "Frauenkrankheiten," vol. 1.

Specimens obtained from different cases, all reported to be cured afterward, show a marked increase of the tissues entering into the structure of the uterine mucosa. The surface of the nodules is seen to be covered with a single layer of columnar ciliated epithelium; this layer penetrates the connective tissue of the mucosa into varying depths, producing the tubular utricular glands. These are sometimes straight, at other times slightly tortuous; sometimes they appear narrow, at others

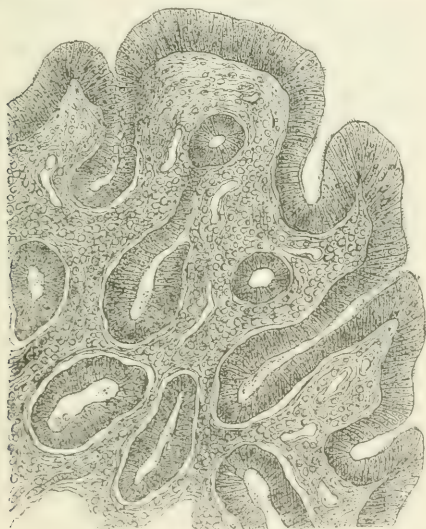


FIG. 1.—FUNGIOUS ENDOMETRITIS. MAGN. 300.

The surface is covered with columnar ciliated epithelia, the prolongations of which produce the newly-formed utricular glands, seen in oblique and transverse sections. The tissue between the glands is an hyperplastic lymph-tissue.

dilated to a considerable extent, without, as a rule, causing the formation of cysts, since even in the widely dilated utricular glands the epithelium appears to be columnar and not flat, as is the case in cysts. Olshausen mentions the fact that he saw the formation of a single cyst just once, which, though distinctly recognizable to the naked eye, was yet extremely small.

In transverse sections of the utricular glands we observe cir-

HEITZMANN : *Diagnosis of Tumors*

cular, oblong, or slightly devious, but always unbroken rows of epithelia, which are columnar ciliated; often the row is uniformly broad, not infrequently, however, one side appears to be somewhat broader than the other. (See Fig. 1.)

Irregular protrusions of the epithelial row toward the caliber may exceptionally be present, corresponding to convolutions of the utricular glands. The connective tissue sometimes produces elevations toward the caliber which, in transverse sections, are of a conical shape and resemble papillæ. The covering epithelium over such elevations adapts itself to the surface of the connective tissue, being arranged vertically at the summit and obliquely at the borders, on the whole assuming a crescentic shape. The calibers appear either empty or filled with a granular mass, viz., coagulated albumin or disintegrated mucous corpuscles, entangled with which are seen a varying number of finely granular, unbroken mucous corpuscles. Oblique sections of a utricular gland often show the epithelia in bird's-eye view, viz., tessellated, and apparently filling the caliber.

The surrounding connective tissue greatly varies in its aspect. In most instances it exhibits the same structure as the normal mucosa of the uterus, *i. e.*, the adenoid or lymph tissue, composed of small globular, compact, or larger granular nucleated corpuscles imbedded in varying numbers in the meshes of a delicate network of fibrillæ, which exhibit small nuclei-like thickenings at their points of intersection. In other cases, the number of lymph corpuscles is scanty, the fibrous reticulum, on the contrary, more conspicuous, so much so that a mesh of the reticulum would hold but one lymph corpuscle. In still other cases the lymph corpuscles are very scanty, and the tissue exhibits all the characteristics of a delicate fibrous connective tissue.

Previous observers consider the lymph corpuscles as inflammatory products or even as sarcoma elements. This view I would oppose, since the mucous layer of the uterus is known to vary greatly with regard to the number of lymph corpuscles present, not only individually, but also with respect to the age. The younger a woman the more adenoid tissue the uterine mucosa is known to have, while with advancing age it is lessened, and at last disappears, being replaced by a delicate fibrous connective tissue. Differences in the aspect of the products of fungous endometritis may be accounted for, not so

much, it seems, by the intensity of the inflammation as by the age of the patient. The tissue between the utricular glands is, as a rule, freely supplied with capillary blood-vessels, the more so the more prevalent the fibrous connective tissue is.

From what I have seen, I have simply to concur with the statement made by Olshausen, that in fungous endometritis all constituent parts of the mucosa (utricular glands, adenoid tissue, blood-vessels) are merely augmented or hyperplastic. I lay stress upon the fact that the outer contour of the utricular glands is



FIG. 2.—FUNGIOUS ENDOMETRITIS. MAGN. 600.

E. Row of columnar ciliated epithelia, lining a utricular gland, the calibre partly filled with mucous corpuscles. *S.* So-called structureless membrane, between which and the epithelia is a row of endothelia. *LL*, Lymph tissue. *C.* Colloid corpuscle.

everywhere distinctly marked toward the surrounding connective tissue and unbroken. Higher powers of the microscope disclose some more facts of importance concerning the diagnosis. (See Fig. 2.)

The lining of columnar epithelium in this instance is rather broad, each epithelium containing one or several finely granular nuclei. Toward the caliber the unbroken epithelia show delicate cilia. In some places, mucous corpuscles and coagulated albumin

are seen to protrude into the caliber, the origin of which is indicated by the swelling and the hydropic condition of the adjacent epithelia. Between the latter and the connective tissue a narrow structureless membrane is traceable, at the inside of which appear quite a number of spindle-shaped bodies, which correspond to what Czerny has termed the endothelial coating of the basement membrane. Outside of the structureless membrane adenoid tissue is present, especially crowded with lymph-corpuseles close to the basement membrane. In the case illustrated, the number of lymph-corpuseles is not very large; they appear in the shape of coarsely granular, often nucleated bodies. In this specimen, a number of colloid corpuseles, which took up a deep carmine stain, were also present. Such corpuseles were also known to occur to previous observers. I have seen them in specimens from another case of endometritis fungosa, in which the tissue between the utricular glands was largely fibrous.

In almost all specimens a great many utricular glands appear detached from the surrounding tissue, evidently due to shrinkage from preservation. In many instances, both the calibers of the utricular glands and also the adenoid tissue is crowded with red blood-corpuseles. Obviously this feature is due to extravasation of blood during the operation.

II. *Myxoma.*

This form of tumors is quite common in the uterine mucosa, and is generally known under the term "polyp." As long as such polypi are small, they are sessile; as soon, however, as they assume the size of a bean or over, they become pedunculated. It sometimes happens that fungous endometritis is combined with small polypoid tumors, and in such cases it will be of importance to know the anatomical feature of polypoid growths, even at an early stage of their development.

The only characteristic feature is the presence of a myxomatous tissue, consisting of a delicate fibrous network with slight thickenings at the points of intersection, and a hyaline or finely granular mucoid basis substance in the meshes, in which we find imbedded single or multiple granular corpuseles. (See Fig. 3.)

The smaller the myxoma, the larger is, as a rule, the number of corpuseles within the meshes. In fact, the earliest forms of

polypoid growths blend with the microscopical appearance of an hyperplastic uterine mucosa. The utricular glands, however, will in such cases be scanty or missing altogether; at least I have failed to detect any glandular formations in several cases of polypoid growths which I have examined. Since Rokitansky, we know that such glands may occur in polypi, and to this fact is very probably due the presence of cysts not infrequently seen in myxomatous tumors of the uterine mucosa. The vas-

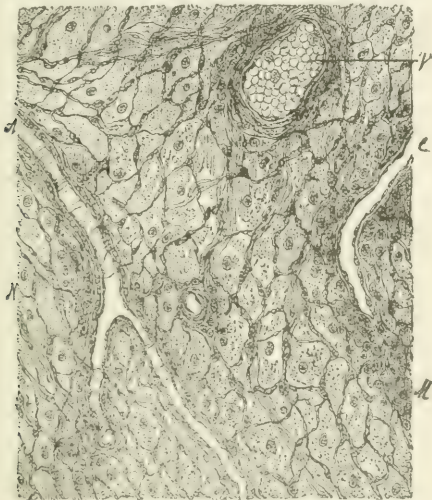


FIG. 3.—MYXOMA OF THE MUCOSA OF THE UTERUS. MAGN. 300.

A, Arteriole. V, Vein filled with red and colorless blood-corpuscles. C, Capillary with a delicate fibrous adventitial coat. M, Cluster of medullary corpuscles or leucocytes. N, Delicate fibrous network of the myxomatous tissue.

cular supply is large, there being present newly formed arteries, veins, and capillaries. A peculiarity of all the vessels, even of the capillaries—which often appear to be remarkably wide—is the presence of a delicate fibrous adventitial layer surrounding them, in connection with the myxomatous network. The arteries are often in a hyaloid degeneration, involving mainly the muscle coat. Around the smaller veins and the capillaries there is not infrequently seen an accumulation of granular cor-

puseles (leucocytes?), and the presence of a larger number of such corpuscles and a larger number of groups of them seems to be a sign of a comparatively rapid growth of the tumor. The myxomatous reticulum is often replaced by, or accompanied with, bundles of a delicate fibrous connective tissue. If the last-named tissue is prevalent, though still in a net-like arrangement and holding a hyaline mucoid basis substance in its meshes, this feature must be considered as a transition into a fibroma, and then the diagnosis of myxo-fibroma is justifiable.

III. *Myoma and Myo-Fibroma.*

Tumors of this kind will, as long as they are small, scarcely ever cause trouble to the patient; hence they become subjects of surgical interference only after having reached a certain size. New growths, either sessile or pediculated, consisting entirely of a dense fibrous connective tissue, do occur, but are certainly rare. In most instances, the fibrous tissue is mixed with newly formed smooth muscle fibres, and will be termed fibro-myoma if the connective-tissue portion be predominant, or myo-fibroma if this is the case with the bundles of smooth muscle-fibres. The latter, owing to their arrangement in bundles, are easily recognized, more especially in transverse sections. The single muscle fibres appear as polyhedral, partly nucleated bodies, arranged in small groups, which are surrounded by a varying amount of fibrous connective tissue. In longitudinal sections the rod-like nuclei of the spindle-shaped muscle fibres are quite characteristic, though it is by no means easy to tell the difference between fibrous connective tissue and smooth muscle fibres in every instance. In doubtful cases, the staining with picro-carmin or the maceration of the specimen with dilute nitric acid may be of value. In the first instance, the smooth muscle fibres will appear in a bright yellow color; in the latter instance, the smooth muscle fibres resist the action of the nitric acid longer than the fibrous connective tissue, and may be isolated by the dissolution of the intervening cement substance. Purely fibrous tumors not quite infrequently have an investment of a layer of smooth muscles. Both fibroma and fibro-myoma are, as a rule, supplied with scanty blood-vessels.

IV. *Sarcoma or Myeloma.*

Sarcoma of the mucosa of the uterus is not by any means such a rare disease as the earlier writers on the subject represented it to be, but before Virchow little was known concerning its pathology. According to Virchow¹ it occurs either in the form of a round- or spindle-celled sarcoma or of a myxosarcoma, both in the shape of a diffuse infiltration. Gusserow² likewise speaks of a diffuse sarcoma of the mucosa without, however, going into particulars as regards its morbid anatomy; he bases the diagnosis mainly upon the clinical course of the disease. The symptoms, he says, are hemorrhages, the blood being accompanied by small detached fragments from the tumor whenever the disease has obtained a higher degree of development, and pains, which are usually so severe as to be considered almost pathognomonic of the disease. If removed, a recurrence will soon take place, and the recurrent tumor grows faster than the original one. The sarcoma at last kills the patient with symptoms of emaciation and cachexia.

J. Schmitt³ adds a third variety to the two known through Virchow, viz., adeno- or lympho-sarcoma. From what I have observed in my specimens of fungous endometritis, I am loth in admitting the diagnosis of adeno-sarcoma without the presence of special features in the epithelia of the utricular glands, which I will presently describe. Neither are the clinical symptoms, at least in the early stages of the disease, sufficiently characteristic for a differential diagnosis. All gynecologists admit that the comparatively harmless fungous endometritis is also subject to recurrences, even after repeated curetting or cauterization, or both (Olshausen).⁴ Nevertheless, in many cases of fungous endometritis the final result may be a permanent cure, whereas in sarcoma recurrences come after each operation, and the more of the latter have been performed the sooner will the recurrence appear, until at last the walls of the uterus become thickened and infiltrated and the sarcoma kills under the symptoms of cachexia.

Sarcoma is admitted to be a connective-tissue growth, which,

¹ "Die krankhaften Geschwülste," vol. 2, p. 350.

² Billroth-Luecke, "Frauenkrankheiten," vol. 2.

³ "A Contribution to the Pathology of the Mucous Membrane of the Uterus," AMERICAN JOURNAL OF OBSTETRICS, January, 1884.

⁴ Archiv für Gynäkologie, vol. 8.

if arising in tissues supplied with glands, will in turn destroy the epithelial or glandular formations. On the other hand, we know through Virchow, that a combination of cancer with sarcoma may also occur, and this is called by him sarcoma carcinomatodes. It is a form in which the original glandular or cancer epithelia are finally destroyed, yielding at last an image under the microscope which corresponds to pure sarcoma. I know of a case of an elderly lady, where an eminent gynecologist diagnosed sarcoma of the cervix uteri. A wedge-shaped piece, removed from the surface of the tumor for diagnostic purposes, gave the following image under the microscope: The stratified epithelium of the cervix was in most places reduced in the number of its strata, therefore thinned; in some places, however, the epithelium was distinctly thickened, exhibiting concentrically arranged nests of epithelia so characteristic of epithelioma. Most of the centres of the nests appeared empty. The subjacent tissue was crowded with large, coarsely granular, partly nucleated corpuscles with a comparatively scanty fibrous stroma of connective tissue. The diagnosis in this case was large round-celled sarcoma; but, based upon the partial new-formation of epithelium mentioned above, the possibility had to be admitted that the disease started as cancer and afterwards changed its character into sarcoma. This diagnosis is in accordance with the statements made by Virchow.

I have examined scooped-out pieces from the inner surface of the uterus from two cases, of one of which I know that the course of the disease had been deleterious, resulting in the death of the patient two and a half years after the first operation, which was soon followed by several more. Originally the features had been those of fungous endometritis, but subsequent examinations after the second or third operation gave the characteristic features of sarcoma, and the diagnosis and prognosis thus became positively established. In the second case, the features were those of sarcoma from the very beginning of the disease, but the patient was lost sight of, and nothing could be learned as to the subsequent course of the disease.

As long as the epithelia of the utricular glands—either original or newly formed—are unchanged or unbroken, the diagnosis of fungous endometritis is admissible, whatever the nature of the interstitial tissue be. A merely hyperplastic adenoid tissue of

the uterine mucosa looks exactly like a small, round-celled sarcoma, and we have no means to make a differential diagnosis between the latter and fungous endometritis. As soon, on the contrary, as the epithelia are broken up in their regular arrangement, and exhibit transitional stages toward the formation of sarcoma, this diagnosis can be made with certainty. That such transitions of epithelia into sarcomatous tissue, leading to the destruction and disappearance of the epithelia, do occur is known from observations made in sarcoma of the testis, the liver, the pancreas, and the salivary glands.¹



FIG. 4.—SMALL ROUND-CELLED OR LYMPHO-SARCOMA OF THE MUCOSA OF THE UTERUS.
MAGN. 300.

UU, Utricular glands, partly destroyed by the sarcomatous growth. R, Single row of columnar epithelia, the remnant of a previous utricular gland. SS, Sarcomatous tissue.

CASE 1. Shreds removed from the mucosa of the uterus of a lady 42 years of age, in March, 1879. Clinical diagnosis: fungous endometritis. Microscopical examination shows a moderate number of utricular glands with unbroken epithelia, and

¹ C. Heitzmann, "Microscopical Morphology." Article by R. Tauszky, page 504.

the tissue between the glands to be hyperplastic lymph-tissue. The clinical diagnosis was, therefore, corroborated by the microscope. In November of the same year, recurrence. The shreds examined under the microscope exhibit the following features. (See Fig. 4.) A few utricular glands are lined by unbroken, columnar ciliated epithelia, the latter being finely granular, distinctly nucleated. The majority of the utricular glands are broken up into rows or clusters of coarsely granular epithelia,



FIG. 5.—SMALL ROUND-CELLED OR LYMPHO-SARCOMA OF THE MUCOSA OF THE UTERUS
MAGN. 600.

E, Columnar epithelia of a utricular gland. *P*, Epithelia fused together into a granular protoplasmic mass. *M*, Epithelia splitting into spindle-shaped medullary corpuscles. *S*, Sarcoma corpuscles. *BB*, Wide capillaries filled with red blood-corpuscles.

each of which contains one or several coarsely granular nuclei, or is partly transformed into a shining, homogeneous mass. Opposite the rows are seen clusters of epithelia, indicative of the previous wall of a utricular gland. In many instances, such a wall is missing and replaced by a coarsely granular mass of protoplasm, or by clusters of corpuscles resembling those of

adenoid tissue. This tissue is traversed by tracts of globular or spindle-shaped corpuscles without any fibrous stroma, bearing the combination of a round- and spindle-celled sarcoma. Here an originally benign process of hyperplasia has assumed the characteristics of a malignant growth, *i. e.*, sarcoma.

Higher powers of the microscope reveal a transition of epithelia into sarcomatous tissue. (See Fig. 5.) The epithelia are at first enlarged, and have become coarsely granular; their nuclei are augmented, and their bodies are split up, either in toto or in part, into small globular or spindle-shaped sarcoma elements. If the epithelia are only partly destroyed, we see clusters or groups of granular nucleated bodies decidedly larger in size than the surrounding sarcoma elements. Such corpuscles may be considered as the remnants of previous epithelia of the utricular glands that have escaped destruction. Another mode of transformation is the following. A number of epithelia coalesce into a coarsely granular mass of protoplasm with faintly marked nuclei. From this mass portions are split off, which are either coarsely granular or homogeneous, bearing all characteristics of globular or spindle-shaped sarcoma corpuscles. Karl Ruge,¹ who speaks of two forms of chronic endometritis—a glandular and an interstitial one—has noticed the transformation of the latter form into sarcoma. He says that in the middle of the tissue the epithelia become five or six times enlarged and increased in number, and assume the different spindle-shaped or round-celled forms which we are accustomed to find in sarcoma. The number of capillary blood-vessels in these specimens is rather scanty. Diagnosis of this case: hyperplasia of the mucosa of the uterus, changing to round- and spindle-celled sarcoma.

CASE 2. Pieces removed in April, 1880, from the mucosa of a lady 39 years of age. Clinical diagnosis: fungous endometritis. Microscopical examination reveals no unbroken utricular glands, since their walls, composed of columnar epithelia, besides being convoluted and folded, are in many places interrupted and missing. The epithelia are large, each being supplied with one or several glistening nuclei. The protoplasm around the nucleus is coarsely granular. Between the epithelia spindle-shaped bodies of a high refraction, wedged in the

¹ "Zur Etiologie und Anatomie der Endometritis," *Zeitschrift für Geburtshülfe und Gynäkologie*, 1880, p. 322.

cement substance, are seen in many places. These wedges are considered by some to be immigrated connective-tissue cells, by others protoplasmic bodies formed anew from the thorns traversing the original cement substance between the epithelia. The surrounding tissue is composed of a myxomatous network, with large glistening nuclei at the points of intersection and a varying number of corpuscles in the meshes, thus exhibiting the characteristics of a myxo-sarcoma. In this case, also, the epithelia are either directly transformed into sarcomatous tissue, after a considerable augmentation of their nuclei and splitting-up of their bodies into a number of medullary corpuscles; or, in a more indirect way, by first fusing together into coarsely granular protoplasmic masses. The vascular supply was likewise scanty in this case.

Both in this and the previous cases, the tissue of the sarcoma was in some places seen to penetrate the calibers or rather the remnants of calibers of previous tubular glands, thus indicating the origin of the so-called inter-canalicular or intra-tubular sarcoma. Nothing of the further clinical history could be ascertained in the second case. The diagnosis was myxo-sarcoma of the mucosa of the uterus, and the prognosis unfavorable.

Both cases have in common a gradual destruction of the epithelial tissue, the latter being either directly or indirectly transformed into sarcomatous tissue. This feature I would consider of the utmost importance in establishing the diagnosis of sarcoma, even in the earliest stages of its development.

The fact must be mentioned that a localized inflammatory process, leading to an ulceration, viz., a local destruction of the mucosa of the uterus, may give an image under the microscope closely resembling that of a round-celled sarcoma (globo-myeloma). I have seen specimens obtained from a small ulcer of the cervical portion, and of granulation tissue covering such ulcers of the cervical portion. The covering epithelium was missing, and the connective tissue appeared to be crowded with inflammatory corpuscles where there was a simple ulcer or where granulation tissue existed there was present a myxomatous structure freely infiltrated with inflammatory corpuscles. In both instances, the number of newly formed blood-vessels was considerable, giving the base of the ulcer or the granulations a deep purple color. This is seen especially when the ulcers or granulations occur on the inverted lips of the cervical

portion of prolapsed and enlarged uteri. In such cases, the microscope alone is not sufficient to determine the nature of the process, unless we know from clinical examination where the morbid process is located.

V. *Papilloma.*

J. Schmitt,¹ without any further reference, says that papillary growths of the uterine mucosa do occur, though they are extremely rare. The cauliflower growths of Clarke, so common on the cervical portion of the uterus are, of course, out of consideration, and all modern pathologists agree that the papillary or cauliflower-like appearance is nothing essential, either for the clinical or the microscopical examination, since both benign and malignant growths may assume such an appearance. I was unable to find descriptions of papillomata of the uterine mucosa in the literature to which I had access, but am fortunate enough to have a typical case of this certainly very rare occurrence in my collection. The case is from a married lady, about 35 years of age, who had never been pregenant. For a number of months previous she used to pass shreds with her menstrual flow, which usually was more profuse than normal. A gynecologist being consulted, declared the shreds to be of a decidual nature, caused, as it were, by a new pregnancy each month. Another gynecologist (Dr. H. M. S——s), after probing the uterine cavity, found soft elevations upon the mucosa of the posterior wall of the uterus, which he removed with the curette for the purpose of microscopical examination. The shreds were extremely delicate, and being placed in a liquid, showed distinct villous ramifications to the naked eye. Under the microscope, the tumor was found to consist of a delicate, fibrous connective-tissue stroma crowded with globular or spindle-shaped corpuscles. The surface was markedly papillary in nature, since numerous partly blunt, partly thread-like elongations appeared, from which secondary buds were seen sprouting. The thread-like elongations contained comparatively few, the buds, on the contrary, rather numerous corpuscles. The covering epithelium, unfortunately, was detached from the surface to a great extent, the remnants left, however, indicated a single row of

¹"A Contribution to the Pathology of the Mucous Membrane of the Uterus. AMERICAN JOURNAL OF OBSTETRICS, Jan., 1884.

columnar epithelium, but whether ciliated or not could not be ascertained. (See Fig. 6.)

Here is a plain case of papilloma of the uterus.

The lady remained healthy for a number of months after the first curetting, but about a year afterward the previous symptoms had reappeared. A second operation was performed, and the shreds, examined this time, exhibited exactly the same features which they did the year before. The covering epithe-

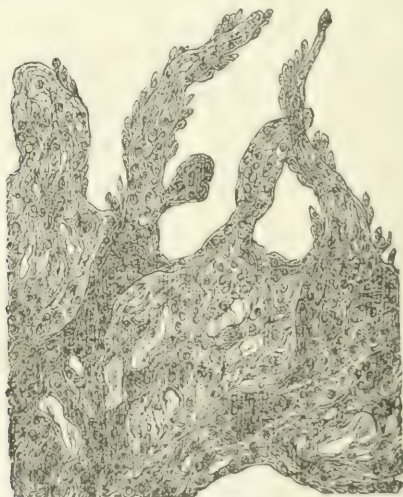


FIG. 6.—PAPILLOMA OF THE MUCOSA OF THE UTERUS. MAGN. 300.

The delicate fibrous connective tissue produces papillary elevations; it is infiltrated with a large number of lymph- or inflammatory corpuscles. The papillae are partly covered with a single row of columnar epithelia.

lium the second time was again a short, columnar one. No epithelial nests were found either at the first or at the second examination, hence the diagnosis of cancer had to be excluded.

This tumor of the uterine mucosa bears a close resemblance to the villous growths not infrequent on the mucosa of the urinary bladder. Luecke announces the opinion that the so-called villous cancer of the bladder is, in the majority of

cases at least, originally a benign papilloma, and assumes the properties of cancer only in a secondary way, whereas A. W. Stein,¹ with other observers, maintains that villous cancer may occur primarily. However this may be, a primary papilloma is known to be rather prone to change, in turn, either into a sarcoma or into a cancer. The transition into sarcoma is indicated by the presence of a large number of medullary corpuscles in the connective-tissue stroma; the transition into cancer by the appearance of epithelial nests in the stroma.

VI. *Adenoma.*

Gusserow,² Olshausen³ and Schröder⁴ are of the opinion that a sharp line of distinction between an hyperplastic new-formation of the utricular glands and adenoma cannot be drawn. According to them, the more numerous the newly formed tubular glands are, and the less developed the interstitial tissue is, the more the diagnosis of adenoma is justifiable. This view seems to be the correct one and, as far as the clinical symptoms are concerned, adenoma of the uterine mucosa seems to have led quite frequently to the erroneous diagnosis of fungous endometritis.

A specimen of adenoma from my collection is illustrated in Fig. 7. Here we see an exuberant growth of utricular glands, to such an extent that the epithelial formations are connected with each other into an almost continuous plexus. Many of these tracts seem to be solid or supplied with narrow calibers only, which are seen best in transverse sections. The tracts are in many places made up of stratified epithelium, the row nearest the connective tissue being columnar, the inner portion cuboidal epithelium. The calibers again appear to be lined by columnar epithelia. Where the knife had reached the surface of a tract, both the columnar and the cuboidal epithelium would appear in top view, *i. e.*, tessellated. The connective tissue between the epithelial tracts is extremely scanty and fibrous in nature, only a small number of medullary corpuscles being present. The latter feature, as well as the absence of any concentric arrangement of the epithelia, would exclude the diag-

¹ "A Study of the Tumors of the Bladder," 1881.

² *Archiv für Gynækologie*, vol. 1, page 246, case 3.

³ *Archiv für Gynækologie*, vol. 8, page 97.

⁴ *Zeitschrift für Geburtshülfe und Gynækologie*, vol. 1, page 89.

nosis of cancer. The assumption, however, that tumors of this kind, though benign at their issue, may readily turn into cancer, is quite plausible. Such a change is favored by the operation itself, which would, of necessity, cause an intense irritation in portions not thoroughly removed. Adenoma in many instances is known to pathologists as a pre-stage to car-

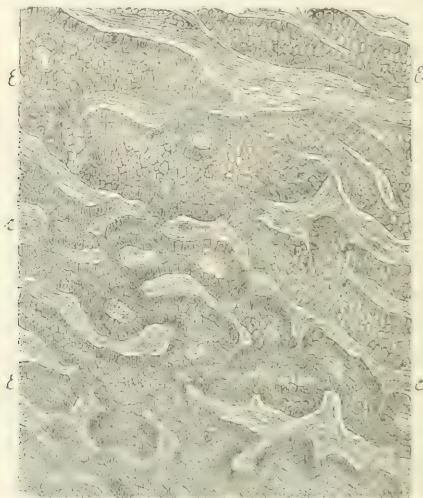


FIG. 7.—ADENOMA OF THE MUCOSA OF THE UTERUS. MAGN. 300.

EEE, Epithelial tracts mostly connected, partly solid, partly with narrow calibers. CC, Connective-tissue portion carrying blood-vessels, scanty and of fibrous structure.

cinoma, hence the prognosis cannot be made as favorable as in the majority of cases of fungous endometritis.

VII. *Carcinoma.*

The literature on this subject is very large. I propose to confine myself to the consideration of cancer which, primarily, has grown not from the cervix uteri, but in the cavity of the uterus, starting from its mucosa. This occurrence is, as is well known, considerably rarer than cancer of the cervix. Güsserow¹

¹ Billroth-Luecke, "Frauenkrankheiten," vol. 2, 1886.

was able to collect one hundred and twenty-two cases of the corpus and fundus uteri, but believes that a certain number of these were pure sarcoma; in others, again, the carcinoma did not start primarily in the uterus. Cases of cancer confined to the body and fundus of the uterus probably form no more than three per cent of all cases of carcinoma uteri.

My specimens were obtained from pieces scooped out of the mucosa at an early stage of the disease, when the clinician did not suspect anything malignant or suspected sarcoma and not

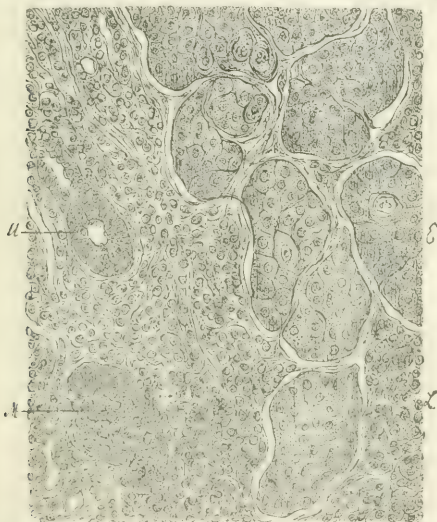


FIG. 8.—EPITHELIOMA OF THE MUCOSA OF THE UTERUS. MAGN. 400.

U, Utricular gland. *M*, Utricular gland, the epithelia of which are transformed into medullary tissue. *E*, Cancer nests composed of large and irregular, partly concentrically arranged epithelia. *L*, Connective-tissue portion crowded with lymph-corpuscles.

cancer. In all these cases, the diagnosis could be ascertained by microscopical examination, and involved, of course, a most unfavorable prognosis.

1. *Scirrhus*.—Scanty epithelial pegs are distributed in a rather abundant and dense fibrous connective tissue. The pegs are in some places connected in a plexiform arrangement, in others apparently isolated. Instead of pegs, irregular clusters,

composed of small, more or less cuboidal epithelia, with distinct nuclei, may be visible. The connective tissue shows but scanty corpuscles, mostly of a spindle shape, but no medullary elements. My specimens of scirrhus are all from the cervical portion, hence I am not prepared to maintain that this form does occur primarily in the mucosa of the body of the uterus. I simply mention it in order to have a complete list of all forms occurring in the uterus.

2. *Epithelioma*.—This form is characterized by the presence of epithelial pegs or nests containing both cuboidal and flat epithelia, the latter arranged in concentric layers. The specimen from which the drawing is made I obtained in Vienna from shreds removed with the curette, where the surgeon thought that he had to deal with a case of fungous endometritis. (See Fig. 8.)

The epithelial pegs are scanty, but exhibit all the features of epithelioma. The surrounding connective tissue is mostly of the aspect of simple adenoid tissue; in some places, however, the lymph-corpuscles appear so much crowded that the delicate fibrous network essential to lymph tissue, cannot be made out.

As the specimen contains also remnants of utricular glands, composed of a single row of columnar epithelia, and a distinct caliber, the question suggests itself, How the epithelia of the utricular glands had been transformed into epithelia of cancer? The theory of Thiersch, Waldeyer, and others, that cancer primarily would originate in epithelial or glandular structures only, has still many advocates both here and abroad.

In my specimen, a transition of true epithelia of the utricular glands into epithelia of cancer is nowhere direct. The epithelia of the tubules first break down into medullary corpuscles or into layers of a nucleated protoplasm, much the same as is the case in the process of transformation of physiological epithelia into sarcoma corpuscles. The medullary corpuscles derived from previous epithelial structures are transformed into cancer epithelia. That the presence of a normal epithelial structure greatly favors the development of cancer, though only through the intermediate stage of medullary tissues, as my specimen would indicate, is a well-established fact; that, however, the epithelia may just as well be transformed into sarcomatous tissue, I have endeavored to prove in a previous paragraph.

3. *Adenoid Cancer or Cancer composed of Columnar Epithelia*.—This form is known to occur about the alimentary tract, especially the rectum, and in the uterus, where tubular glands, lined with columnar epithelia, are present as a normal occurrence. (See Fig. 9.)

The most conspicuous features are tubular formations with manifold convolutions, arranged in groups or alveoli, or exhibiting a plexiform arrangement. The columnar epithelia are short, nucleated, and in many places broken up into medullary



FIG. 9.—ADENOID CANCER OF THE MUCOSA OF THE UTERUS. MAGN. 300.

EE. Epithelial tracts convoluted, inclosing calibers of varying diameters; the lining epithelium being columnar. CC. Connective-tissue tracts with numerous blood-vessels crowded with medullary corpuscles.

corpuscles. The calibers accordingly are extremely irregular, and often filled partly or wholly with medullary corpuscles. It is extremely difficult to decide where these come from. It may be that they result from a breaking-up of the epithelia themselves, or that they have been carried or grown into the calibers from without, from the connective tissue, through interruptions in the epithelial rows. The surrounding connective tissue is crowded with such corpuscles, and holds comparatively few

blood-vessels. Fibrous tracts of connective tissue are recognizable in the vicinity of alveolar epithelial groups, whereas the infiltration with medullary elements is very marked around the epithelial formations of a plexiform nature. It is well known that with the increasing number of such medullary corpuscles the malignancy of the tumor is also intensified. Tumors of this kind are known to involve, in a comparatively short time, not only the walls of the uterus, but also the broad ligaments, the Fallopian tubes and the ovaries. The tubular struc-

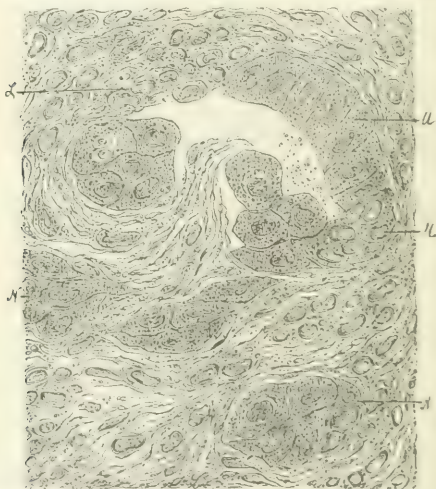


FIG. 10.—MEDULLARY CANCER STARTING FROM THE MUCOSA OF THE UTERUS. MAGN. 600.

U, Remnant of a utricular gland. M, Epithelia breaking down into medullary corpuscles, before changing into cancer epithelia. NN, Nests of cancer epithelia. L, Lymph tissue.

ture of the tumor is often preserved even in rapidly growing portions far away from the point of issue—the mucosa of the uterus.

4. *Medullary Cancer*.—Under this heading all rapidly growing cancers are included, in which the epithelia are arranged in irregularly distributed alveoli, being largely predominant over the connective-tissue portion. (See Fig. 10.)

The case under consideration is derived from a lady nearly

fifty years of age, the wife of a well-known physician. A gynecologist having been consulted, suspected at once a malignant growth, and finding a marked infiltration of the mucosa at the fundus uteri, removed the tissue within access by means of the curette. The microscopical examination revealed the presence of a medullary cancer of considerable malignity. Near the surface are utricular glands, folded and convoluted. The epithelial row is in many places broken, and the epithelia themselves transformed into medullary tissue, from which cancer nests, whose epithelia are irregularly cuboidal, have arisen. Such nests are scattered throughout the extent of the uterine mucosa in large numbers, but without any regularity as to arrangement and size. The connective tissue around the nests is crowded with lymph-corpuseles, in some places to such an extent that no fibrous structure is recognizable. The cancer nests are located either in alveoli, surrounded by a delicate fibrous connective tissue, or small groups of cancer epithelia are located without a marked boundary in the masses of lymph- or inflammatory corpuseles. The type of this tumor is medullary and not adenoid cancer, and the epithelial formations, lined by columnar epithelia, I would consider as the original utricular glands and not newly formed, as we are accustomed to see in adenoid cancer. Should, however, the latter type have been the issue, it must have changed its character very soon into the medullary one. The clinical history of the case is briefly as follows: Several months after the first curetting, the lady was brought to Germany, where hysterectomy was performed per vaginam. The patient died one hour after the operation from shock.

To sum up the results of my researches, I would point out the following corollaries:

1. Endometritis fungosa is characterized under the microscope by the presence of a varying number of tubular utricular glands, the epithelia of which are columnar ciliated, but always unbroken.

2. In endometritis fungosa the connective tissue between the tubular glands may be crowded with lymph-corpuseles, exhibiting an hyperplasia of the adenoid or lymph-tissue of the uterine mucosa, or the interstitial tissue between the tubules is found to be myxomatous or even fibrous in nature. These differences very probably depend on the age of the patient.

3. Polypous tumors consist of myxomatous tissue and are properly termed myxoma, or if bundles of a delicate fibrous connective tissue enter the structure, myxo-fibroma. Glandular formations in such tumors are, as a rule, scarce or absent : they not infrequently contain cysts.

4. Sarcoma, especially in its earlier stages, occurs under the clinical symptoms of fungous endometritis, mostly diffused, and the correct diagnosis can be made with the microscope only when the epithelia of the tubular glands, either the original or the newly formed, are destroyed by the sarcomatous growth.

5. In sarcoma, the epithelia of the utricular glands are transformed into sarcoma corpuscles, either directly by a process of division or through the intervening stage of a coalescence into granular protoplasmic masses.

6. Papilloma of the uterine mucosa does occur in exactly the same way as on the mucosa of the urinary bladder. This form of tumor is extremely rare.

7. Adenoma is a rare form of tumor sometimes appearing under the clinical features of fungous endometritis. It consists of a new growth of the utricular glands in a plexiform arrangement and with narrow calibers. The connective tissue between the epithelial formations is fibrous and scanty.

8. Cancer appears in the uterine mucosa in the form of epithelioma, adenoid and medullary cancer. The utricular glands are not directly transformed into cancer nests, but the epithelia of the utricular glands first break up into medullary corpuscles, or into larger masses of protoplasm, from which the cancer epithelia arise.

SOME RARE CLINICAL OBSERVATIONS IN OBSTETRIC PRACTICE.¹

BY
SAMUEL C. BUSEY, M. D.,
Washington, D. C.

THE title of an essay should indicate the subject-matter of discussion. In this important requisite, the above title is entirely wanting. It would have been impossible to have grouped

¹ Read before the Washington Obstetrical and Gynecological Society, March 18th, 1887.

together the following reports under one common heading other than some general statement that they were clinical observations in obstetric practice. They are presented for your consideration, not as unique cases, but as illustrations of some surprises which have caused me much embarrassment and some anxiety, and may contribute something as aids in the diagnosis and management of uncommon and unexpected complications of pregnancy and labor.

CASE I.—A Caul-Sac Obstructing the Diagnosis of Position in Head Presentation.

Mrs. E., pregnant for the third time, commenced to feel very slight pains during the early morning of July 13th (1879), but they were so trifling as not to attract serious attention. She had not expected to be confined prior to August 1st. At 10 A.M., the os only admitted the end of the index finger; the fetus was too high for the recognition of the presentation without the introduction of the hand into the vagina, which was not done. At 7 P.M., the os was dilated to about the size of a silver half-dollar. At this time the diagnosis of head presentation in L. O. A. position was made. At 11.30 P.M., the os had dilated to the size of a silver dollar and was dilatable. The bag of waters had formed and was protruding; the membranes felt thick and tough; and the pains were not vigorous. An hour later, the amniotic sac was ruptured and a free and copious discharge of fluid followed. To accomplish this I had, during an intermission of pain, passed the right index finger through the os and posteriorly (the patient lying on her left side) between the membranes and inner surface of the uterine wall, just far enough to feel the head, and at the moment of greatest tension of the sac the sharp edge of the finger nail was suddenly thrust against it by extending the partially flexed finger. The perforation was made directly opposite the anterior fontanelle. Immediately after the escape of the "waters," I could feel the fontanelle, follow the course of the sagittal suture, but could only reach the posterior fontanelle high in the left anterior direction. Flexion had not taken place, but the head being small and the pelvis roomy, interference was not deemed necessary, as I believed that as soon as the expulsive pains were sufficiently powerful the vertex would descend and rotate under the arch of the pubis. The pains changed in character and speedily increased in force. Soon after the exploration just referred to I discovered the condition which I have called a *caul-sac*. The index finger being introduced through the dilated os, came in contact with a sac extending from the posterior margin of the anterior fontanelle laterally around the parietal protuberances and backwards over the vertex concealing the posterior fontanelle. To the sense of touch the sac seemed to be filled with fluid. It became very tense during the pains, and during the intermissions

was sufficiently so to prevent recognition of the sutures, bony margins, or posterior fontanelle; and had I not known that I had ruptured the amniotic sac, and discharged a considerable amount of fluid, I might have punctured a second time; but relying upon this fact I avoided any violence. No caput succedaneum could be felt; nor did the sac feel like the scalp distended with hydrocephalic fluid. The head was small and the labor was progressing satisfactorily. The vertex descended, rotated under the arch of pubis, and at 3 A.M. (14th) the head passed the vulva. Then the nature of the difficulty was discovered to be a hood consisting of a portion of the membranes which covered the entire vertex, extending laterally and posteriorly, as previously described, between which and the underlying scalp was interposed a quantity of amniotic fluid. This hood I removed before the trunk of the child was delivered. At what stage of the progress of the head through the maternal passage the caul separated from the remaining portion of the secundines I cannot determine; but the secondary sac was recognized during the passage of the head through the parturient outlet, and was not understood until after the head had escaped and was examined *in situ*.

The formation of the secondary sac was undoubtedly due to the location of the puncture in the amniotic sac. As a rule, spontaneous rupture of the membranes takes place in the part protruding through the os, most frequently at or about the most dependent part or apex of the bag of waters, because at this point the pressure force of the compressed liquid is greatest and the resistance least. I have never witnessed the expulsion of an ovum "at term" with the membranes intact; nor would I permit such a delivery to occur, if avoidable. I have, however, very often encountered persistent membranes which delayed delivery. When to interfere in such cases is a very important question. Too early evacuation of the liquor amnii retards dilatation of the os, prolongs labor, intensifies the suffering of the woman, increases the risks of the fetus, and augments the difficulties and dangers of efforts to correct transverse and other abnormal presentations. Protracted persistence of the membranes wastes uterine power, lessens its propulsive force, delays retraction of the cervix, and may prevent the engagement of the presenting part in and its escape through even a softened and dilatable os. The tensile strength of the membranes (Duncan) varies from four to thirty-seven and a half pounds. The propulsive force which bursts the bag of membranes is frequently, in natural labors, quite sufficient to complete delivery; hence it is obvious (Duncan) that in many such labors the ovum

would be expelled with membranes entire if artificial rupture had not been accomplished. In those cases of persistent membranes where the tensile strength is at or near its maximum, or even above the average, it is equally obvious that delivery is delayed, and there is an unnecessary expenditure of uterine force with consequent exhaustion, which is proportionate to the duration of the persistence of the bag of waters and condition of the patient. In no case ought the bag be permitted to advance in its integrity beyond the external surface, and in many cases an earlier discharge of the waters will be expedient. The puncture of the bag should always be made at or as near as may be convenient to the centre of the convex portion. The tear does not, however, even when spontaneous, always take place at the most dependent part in the vaginal pouch, or even external to the os. When located high within the os, there may be persistence of the bag of waters notwithstanding the gradual discharge of the liquor amnii. Spontaneous rupture usually occurs at the beginning of the second stage of labor.

CASE II.—An Elongated and Protruding Bag of Waters Obstructing Diagnosis of Presentation.

Mrs. D. was delivered of her second child April 13th, 1873. At my first visit, I did not make a diagnosis of the presentation, but simply satisfied myself that labor had begun. At my second visit, made several hours later, I was astonished to find, protruding from the vulva, an elongated and tense sac terminating in an irregularly shaped enlargement. This bag of waters I could trace up to and within the os uteri, where it was again expanded into a roundish and larger tube. Between this point and the distal and protruding extremity its calibre was much smaller. The os was dilated to about the size of a silver dollar and dilatable. I knew the pouch was the bag of waters, but I could not determine the cause of its peculiar shape. I did not attempt to make a diagnosis of the presentation by the introduction of the finger into the uterus, because I feared to prematurely rupture the membranous bag, and could not, either by inspection or palpation, ascertain its contents beyond the fact that it was fluid. After waiting some time, perhaps an hour, and no change having taken place, I punctured the membranes, and then, to my great surprise, discovered that I was dealing with a presentation of the right foot. The other foot was brought down and delivery accomplished as usual.

This observation suggested the inquiry into the diagnostic value of the size and contour of the bag of waters in the determination of the presentation. I pursued this investigation

for a while, but it did not promise much beyond the general statement that its size and shape were as much dependent upon the condition of the os, amount of liquor amnii, tensile strength of the membranes, and power of uterine contraction as upon the presenting part of the fetus. In head and breech presentations the membranous bag is more or less hemispherical, and more or less regular in contour, according to the presence and extent of lacerations of the cervix and shape of the os. In breech cases, the bag is usually less tense but more voluminous than in head presentations, because of the imperfect closure of the lower uterine segment; and when the os is rigid, it may be elongated. In cases of extension of an extremity with persistence of the membranes, there would be an elongation of the pouch, and the shape of the most dependent part might indicate the presence of a hand or foot. Madame Lachapelle declared she was never anxious when "the flat sac" was present, thereby meaning, says Cazeaux, that any "very great protrusion of it nearly always announces an unfavorable position."

CASE III.—*Vesical Distention Mistaken for Puerperal Peritonitis.*

This case was seen in consultation the seventh day of the puerperium. Multipara. Fever with abdominal pain and swelling began on the fourth day and ranged very high, notwithstanding the free employment of quinine. At the time of the consultation the temperature was above 104° ; the pulse was very frequent and feeble, barely perceptible. There was considerable tremor of hand and subsultus. The delirium was mild; the general aspect of the patient indicated speedy death.

The abdominal swelling had continuously increased from its beginning. The area of percussion flatness corresponded with the contour of a greatly distended bladder; beyond its limits the percussion note was tympanitic. Fluctuation was very distinct within the borders of the dull area. There was no pain or tenderness on pressure in any part of the abdomen. The nurse insisted that the patient had regularly passed water in sufficient quantity, and the attending physician had accepted her statements without suspicion of error. There was a strong urinous odor about the bed and person, probably attributable to the constant dribbling from an over-filled bladder. I drew off two quarts of high-colored, turbid, ammoniacal urine. After the evacuation of the bladder the abdominal walls were relaxed and flabby. The patient continued to sink and died during the succeeding night.

The title of this case is the expression of my own conviction of its nature. I believe the retention of urine had continued

from her confinement, and that she died of acute toxemia. The enlargement of the abdomen had been observed, but had been supposed by the attending physician to be tympanitic distention. A careful inspection, percussion, and palpation would have made the diagnosis perfectly clear.

CASE IV.—*Labor Pains Mistaken for the Pain of Vesical Repletion.*

In describing the case of "fecal impaction obstructing labor" (AMER. JOURN. OBST., vol. XIX., p. 1,093) which I reported to this Society April 2d, 1886, I referred to the mistake of the patient in ascribing her distress and pains to inability to pass water when in fact she was in labor. I drew off four ounces of muddy urine, and, suspecting that I had not emptied the bladder, endeavored to ascertain the cause of the failure by vaginal examination, when I discovered the fecal mass filling the pelvis, and the dilated os with the bag of waters above the symphysis pubis. The recognition of these conditions absorbed my attention, and I did not again employ the catheter or attempt by palpation to verify or disprove the statement of the patient that she was suffering from retention of urine. I assumed, without consideration, that she was mistaken, and proceeded to break up and dislodge the fecal mass. When this was accomplished, the womb descended into the pelvis and labor progressed speedily to completion. About one hour afterwards she passed a very large quantity of urine, thus proving that I had failed to empty the bladder. This failure was due to the upward and forward displacement of that viscus and the impingement of the gravid uterus, which had been lifted out of the pelvis by the very large fecal mass which occupied it.

Her satisfactory recovery does not exclude the possibility of danger from vesical distention during labor. After having freed the rectum of the fecal accumulation, and the womb had descended into the pelvis, the condition of the bladder should have been ascertained either by catheterization or abdominal palpation. I recall your attention to this case because of the novel relation of the fecal mass in the rectum to the displaced parturient womb, and to the elevated and distended bladder, by which micturition was impeded and labor obstructed.

The following case presents vesical repletion in an equally novel but entirely different aspect.

CASE V.—*Cystocolpocele¹ Complicating Pregnancy.*

DECEMBER 21st, 1886.

¹"MY DEAR DOCTOR:—The term *cystoccele vaginalis* has been in use thirty or forty years, but it is objectionable as bringing a Greek and Latin

During the early morning of November 24th, 1886, I received a note from a gentleman informing me that his wife was in labor, and requesting my immediate attendance. I found the lady, who was expecting to be confined the latter part of December, in great suffering, the pains seeming to be continuous with quickly recurring exacerbations. She insisted that they were labor pains. Proceeding to make a vaginal examination, the finger passed the ostium vaginae and with some force entered a tense, resilient pouch, apparently lined with a smooth, moist, mucous surface, the walls of which could be displaced by the movements of the finger to a limited extent laterally, upwards, and backwards (the patient lying upon her back), but always closing around the finger. I could not find the os, cervix, nor a presenting part; nor could I feel a cicatrix, a line of adhesion, or a point of induration. My suspicion was that the vagina had been obliterated by inflammatory adhesions. It was not an amniotic sac because of its uniform tenuity, the absence of hemispherical or elongated shape, and the impossibility of defining its contour by forcing the finger between it and the vaginal walls. After a careful and prolonged exploration, the patient all the time asserting that I was causing her increased pain, I desisted completely baffled. I knew that she had given birth to a male child two years before, and believed that she was now far advanced in her second pregnancy. She had always enjoyed good health, and neither she nor her husband had ever called my attention to any pelvic trouble. To gain time for reflection I walked the floor, talked with the nurse, and made many irrelevant inquiries of the patient. During this time I elicited the information that she had, during the previous day, three loose movements from her bowels, but had not passed water since the previous early afternoon, and I called to mind the methods of exploration by the rectum and abdomino-vaginal palpation. Thus reassured, I resumed the examination by the introduction of the index and middle fingers. The blind pouch, formed by the pressure of the fingers against the cyst, remained persistent and inexplicable. Then turning the palmar surfaces of the examining fingers towards the bladder, and gently tapping with the un-

term together. Cystocele is, of course, Greek *κύστις* the bladder, and *κῆλη*, a tumor; but vaginalis is simply Latin. Nevertheless, it must be admitted that *cystocele* is a Latinized form, and so the offence is palliated. I think it would be better to substitute for vaginalis the accepted Greek equivalent, *κόλπος*, which is commonly employed to signify the genital passage in the female. The term might be *cystocolpocoele* or *colpocystocele*, the latter being more euphonious, but the first being more correct pathologically.

It is very common to preserve the *kappa* in words compounded with *κόλπος*, as *kolporrhaphy*, but I think if the Latinized form of *c* is used for *κύστις* and *κῆλη* it would be inconsistent to spell the new comer with a *K*.

Very truly yours,

ROBERT FLETCHER."

employed hand the abdomen above the pubis, within the area of vesical distention, I felt distinctly the wave of fluctuation against the fingers in the blind pouch, and the thought flashed through my mind that I was dealing with a distended bladder, prolapsed into and filling the pelvic cavity, obliterating the vagina and interposing a column of fluid within its tense walls, between the cervix uteri and ostium vaginae. I immediately directed the nurse to assist the patient to the commode, and then retired to the adjoining room to await the result. Upon my return, the nurse informed me that the patient had passed a very large quantity of urine, which had been emptied into the closet. The pain had ceased and the blind pouch had disappeared. The os and cervix could easily be reached. Labor had not begun. I advised the patient to go to sleep and forget the suffering of the four previous hours, and I reclined for the coming hour in peaceful relaxation upon a comfortable lounge.

This is to me an unique observation. Prolapse of the bladder during labor has been quite frequently witnessed. Such a complication may be caused by a pre-existing cystocele, previous protracted and difficult labors, inflammatory adhesions, habitual retention of urine, pressure of the head during the early period of labor upon the fundus or middle of the bladder when it is partially filled with urine, and constriction of the urethra from unusual elongation. Such descent of the bladder has been mistaken for a hydrocephalic head, a persistent amniotic sac, and an ovarian cyst; and in several instances it has either been incised or punctured, thus establishing a vesicovaginal fistula.

It thus appears that in its diagnostic aspects I was dealing with a very grave complication. I supposed the patient was in labor, and if I had concluded the vesical prolapse to have been either of the conditions for which it has been mistaken I might have committed a very grave mistake and seriously injured the patient.

The case here reported differs from the cases of cystocolpocele complicating labor, in that it occurred a month previous to the labor and did not exhibit the usual subjective symptoms of that condition. It was characterized by pains not unlike labor pains and therefore the more deceptive, and by absence of the usual sensation of fulness and dragging, and constant painful desire with inability to pass water; tenesmus and dysuria were not only absent, but there was not even an inclination to urinate; and the bladder was evacuated with facil-

ity and ease when the patient was assisted to the commode. The negative symptoms were calculated to entice one into the errors that have been committed in somewhat similar cases.

The history of retention of urine, with tenesmus and dysuria, an abdominal tumor in the region of the bladder, and the detection of a fluctuating tumor in the vagina painful to pressure, and that can be evacuated by the urethra, constitute the essential signs of a correct diagnosis. With a knowledge of the possibility of such a displacement of the bladder and method of diagnosis no mistake would be excusable. It may happen, however, that an accumulation may take place without any vesical intumescence above the pubis. In that event, the discovery of a soft, fluctuating, and elastic tumor in the cavity of the pelvis, and its evacuation by the urethra, must be relied upon for a diagnosis. The condition of the bladder must be definitely ascertained.

CASE VI.—Puncture into the Pelvis of a Fetus with a Blunt Hook.

Madam X. was taken in labor June 20th, 1886. She had been in ill health for several years and was greatly distressed by the accidental death of her elder son. The labor progressed slowly, due to her feeble condition, constant apprehension of danger, the absence of efficient uterine contraction, and to a breech presentation. In consequence of the delay and supervening exhaustion, I determined to resort to artificial delivery under anesthesia, and invited Dr. Charles E. Hagner to assist me.

The breech presented, with extremities reflected on the trunk, in right dorso-anterior position. After a futile attempt by traction with the finger over the fold of the right thigh, we decided to make an effort with the blunt hook. I passed the instrument from within out, with point towards the pelvis, over the fold of the right or pubic thigh and felt the end on the outer pelvic side. At my request, Dr. H. examined the adjustment of the instrument and, with the statement that it was all right, surrendered the handle to me. After continuing the traction for a while, only during the feeble pains, I felt a sudden jerk as if something had given way and heard an indistinct thud. Supposing I had fractured the thigh I reversed the hook and resumed the effort of traction, with a finger against the point between the thighs. Failing in these efforts, I brought down the legs and speedily completed the delivery. The child was born asphyxiated, but was resuscitated after considerable effort. The injury inflicted by the blunt hook consisted of a puncture through the abdominal wall above the ramus of the pubis, midway between the symphysis and inferior spinous process of the right ilium, penetrating the pelvis to the depth of three-fourths of an inch. The edges of

the transverse slit through the integument were brought together by a suture and the wound was dressed antiseptically with a pledget of absorbent cotton dusted with iodoform. On the third day some pus oozed from the wound. The suture was cut out, the wound cleansed and dressed with dry absorbent cotton. The next day Dr. J. Ford Thompson saw the child and advised dressing daily with a narrow strip of iodoform gauze gently inserted into the wound and covered with a pledget of absorbent cotton. This treatment was followed with great care for two weeks without any apparent improvement. I then concluded that the method of dressing, which necessitated the frequent extension of the thigh, prevented reparation by gaping the wound, and substituted for it daily cleansing of the surface and a thin layer of dry absorbent cotton, with direction to the nurse to avoid any manipulation which might extend the thigh and open the wound. At the expiration of another week the wound was entirely healed, leaving only a linear cicatrix.

When discovered I regarded the injury as fatal, and so informed the father who replied, if that was so I ought to discontinue my efforts at resuscitation which I declined. From its birth to the completion of the cure the child never exhibited the slightest symptom or, in fact, any evidence of the reception of such an injury. The apprehension of injury to the bladder or rectum was dispelled by the absence, at the expiration of twenty-four hours, of any sign of damage to either of these organs.

This accident was the result of over-caution on my part. The displacement of the instrument must have occurred during the transfer from Dr. H. to me. I should either not have extended to my colleague the courtesy of an examination or, having done so, should have requested him to proceed with the efforts at traction or, having resumed control of the instrument, should have re-examined the adjustment before proceeding.

This case was also complicated with adhesion of the placenta, which was delivered by Dr. H. The hemorrhage was controlled by hot-water intrauterine injections. Mother made a good recovery.

CASE VII.—Four Drachms of the Fluid Extract of Cascara given for an equal quantity of the Fluid Extract of Ergot.

At 11 P.M. Feb., 1882, I was invited by the late Dr. Beale to assist him in a case of protracted and difficult labor. The patient, a short, dumpy primipara, had been in active labor about twelve hours. The head presented in L. O. A. position and seemed to be arrested at the brim in the biparietal diameter. With the forceps the head was drawn into the cavity of the pelvis, but could not be delivered through the inferior outlet. After several ineffectual efforts with the forceps, I lifted the head from the

pelvis, seized the feet, and attempted to accomplish delivery by version. I could not, however, force the head through the pelvic outlet by traction on the lower extremities, combined with supra-pubic pressure and a finger in the mouth of the child. Forceps to the after-coming head were equally futile. I then passed the blunt hooked end of one blade of Hodge's forceps into the mouth of the child, and thus with traction on the extremities and the blade of the forceps completed delivery. The child was asphyxiated and could not be resuscitated. The expulsion of the placenta was followed by a profuse hemorrhage. A second drachm, the first having been given immediately after the delivery of the placenta, of the fluid supposed to be ergot, was promptly administered by Dr. Beale, and I grasped and firmly held the uterus. As soon as it could be obtained, a hot-water intrauterine injection was employed. The contraction which followed soon remitted and the hemorrhage returned. A third and a fourth drachm of the fluid extract was given, and the hot-water injections were repeated a second and a third time, but the temporary contractions of the womb were speedily succeeded by complete relaxation and recurrence of the hemorrhage. An hour or more elapsed during these ineffectual efforts to secure persistent uterine contraction when, worn out by the continuous stooping posture, with one hand grasping the womb and the other holding the nozzle of the syringe, I insisted that Dr. Beale had made a mistake or else the ergot was worthless. He replied that he had purchased it himself and that it was Squibb's preparation. Not satisfied, a messenger was dispatched to a druggist for Squibb's fluid extract of ergot. This was obtained and administered and soon permanent contraction was secured. The patient was made as comfortable as possible, and the necessary instructions were given to the nurse. When about to leave the house, Dr. Beale discovered the bottle of ergot he had purchased in his overcoat pocket. He had given four drachms of the fluid extract of cascara within the period of one and a half hours. After a brief conference, it was decided that he should remain in the house during the remainder of the night and await developments. The convalescence of the patient was not disturbed by any of the ordinary discomforts of the puerperal period. Her bowels moved naturally on the third day and her recovery was speedy and complete.

This patient had a prolonged and difficult labor ; was subjected to several ineffectual efforts at delivery with the forceps ; then the head was lifted from the pelvis ; the child was turned ; delivery of the after-coming head by traction on the extremities combined with supra-pubic pressure failed, as did also the effort with the forceps to the after-coming head combined with traction by the extremities. Finally, delivery was accomplished by traction with the blunt hooked end of the blade of the forceps

in the mouth of the child combined with supra-pubic pressure. Then followed a profuse and persistent hemorrhage, and the ineffectual efforts to secure permanent contraction of the uterus, during which four drachms of the fluid extract of cascara were administered; nevertheless, her convalescence was uninterrupted and recovery complete.

The usual rapid and satisfactory convalescence of lying-in women, upon whom the employment of hot-water intrauterine irrigation has been provoked by some grave complication of labor, has impressed me with the conviction that thorough washing out of the cavity of the womb after labor is the most effective preventive of certain puerperal disorders. I would not advocate it as a routine practice; nevertheless, I am so fully convinced of its value that I would advise it in every case of manual or instrumental delivery.

Traction with the blunt hook in the child's mouth is a novel procedure. I examined the condition of the mouth of the child very carefully, and could not detect any injury. It might have been otherwise in a living child. At the time the instrument was employed, I believed the child was dead, for considerable time had been expended in the previous futile efforts.

CASE VIII.—*A drachm of Monsel's Solution given instead of an equal quantity of the Fluid Extract of Ergot.*

In November last, Madam X. miscarried during the sixth month of her third pregnancy. Directions were given to the nurse to administer a drachm of the fluid extract of ergot at 9 P.M., if necessary. Very soon after that hour I was hastily summoned by the information that the nurse had given a drachm of Monsel's solution. The patient recognized the mistake immediately, and the nurse promptly administered a large potation of water. I found the patient perfectly calm, but complaining of a sense of weight and scalding in the stomach, with frequent very acid eructations, and a sharp taste of vinegar. Her pulse, temperature, and general condition were entirely satisfactory. I ordered hourly doses of a half ounce each of a solution of the bicarbonate of soda (prepared by dissolving one drachm in an ordinary goblet of water) until the acid eructation ceased; gum arabic water *ad libitum*; and, in the event of any disturbance of the bowels, one or more drachm doses of paregoric. Several hours after the solution of iron had been taken the patient vomited freely, and in quick succession had two copious liquid stools. The catharsis was checked by paregoric. No further trouble occurred. At my visit the next day the condition of the patient was in every way satisfactory. Her convalescence was uninterrupted.

LAPAROTOMY AS A CURE FOR TUBERCULOSIS OF THE PERITONEUM.

BY

ELY VAN DE WARKER, M.D..

Syracuse, N. Y.

THE subject of this paper is well illustrated by the detail of the following case :

Mrs. C., aged 28 years, four years married, the mother of one child 1 year old, of medium weight, size, and height, light blonde, sought my advice for swelling of the abdomen, which she supposed to be a tumor. She had noticed a gradually advancing enlargement for about two months. On examination, fluctuation was marked but diffuse, extending in an evident wave over the abdomen with the patient upon her back. In this position the abdomen was flat and bulging in either flank, with protrusion of the umbilicus. In this position, also, the area of percussion dullness corresponded to the extent of lateral fulness, while the umbilical region was clear, down nearly to the hypogastrium. On changing her position to the side, the upper flank became clear on percussion, while the region of dullness was transferred to the lower side on a line nearly to the level of the umbilicus. On reversing the position, the regions of dullness and clearness changed sides. The examination of the pelvic organs gave negative evidence. The uterus approximated the normal in size and position, the organ was freely movable and was not affected by abdominal manipulation, except by the percussion wave which could be felt in the vaginal cul-de-sacs. The region of the liver was free from tenderness and gave a normal outline on percussion. The temperature was normal, the appetite fair, there was no cough, while the lungs offered no suspicion of disease. She complained of indigestion and a tendency to looseness of the bowels with flatulency. The urine was stated by the patient to be normal in amount. The specific gravity was 1.019, acid, and free from albumin. The patient was slightly falling off in flesh; there was no edema of the feet or eyelids.

There was but one diagnosis to be made here—that of ascites : but there was no evident cause of the peritoneal effusion. She was placed upon tonics and diuretics and sent home. She was seen at intervals of two or three months. There was no change other than in a slow increase of the ascites and in loss of weight. In the early spring she had a troublesome cough which lasted five or six weeks, but abated by the use of simple remedies.

Nothing further was seen of the patient until late in the fall of the same year. A complete change was then observed in the con-

dition of the abdomen. The outline had lost the character of free fluid effusion, the flatness and bulging of the flanks had disappeared and the abdomen became prominent and rounded. The area of percussion dulness had changed from the central region to the loins. By deep palpation in the right iliac space, an irregular hardened mass could be detected, and an induration of apparently the same size and character near the right hypochondriac region. The wave of fluctuation was limited by the line of dulness at the epigastrium and at the flanks. The uterus seemed free from any connection with the abdominal masses and was in a fairly normal position. The umbilicus was yet protruberant.

I was in great doubt as to the state of affairs. There was no cough or hectic, the temperature was about normal; she had wasted considerably, the face was pinched and the expression such as seen with ovarian cystoma, not like that observed in malignant disease of the pelvic or abdominal organs. The urine free from albumin. The feet were slightly edematous. I abandoned the former diagnosis, but without offering a positive substitute advised further delay.

In March, 1886, respiration being difficult from pressure, and the abdomen painful, she was admitted to the Central New York Hospital for Women for the purpose of aspirating the abdominal fluid. She was anxious for an operation, as she believed that she had a tumor; but I could not divest my mind of my first impression and refused to operate in any other way than by aspiration. We succeeded in removing only about a quart of straw-colored fluid, which did not materially reduce her size.

The fluid coagulated by boiling but not by standing, and the rather firm coagulum broke up into flocculent masses by excess of acetic acid. It was not examined microscopically, which is to be regretted, as I believe important facts may be had by such an examination of the fluid in these cases.

On June 10th, 1886, she was again admitted to have her theory of her case acted upon, as I consented to operate. I must confess that I had been gradually coming over to her view of the case, and now believed that the former ascites was masked by the subsequent development of an ovarian cyst. I invited in Dr. H. D. Didama to see her. He gave her a careful examination, and while not positive, favored the opinion of an ovarian cyst, and advised an exploratory incision.

The next day, I operated in the presence of Drs. Didama, Totman, and the house surgeon, Miss Dr. Adams. I made an incision about five inches long, fully expecting to come upon a cyst, but upon reaching the peritoneum no separation could be made between it and what ought to correspond to a cyst-wall, and yet what we regard as peritoneum was enormously thick. I carefully worked my way through and was rewarded by a jet of fluid from what appeared to be a cyst cavity. The incision was enlarged to the full extent of the external wound,

the patient turned upon her side, and the cavity emptied. Some further attempts were made to separate a cyst-wall from the peritoneum, but it only resulted in tearing the peritoneum from the abdominal wall. The idea of a cyst was abandoned and we confined our efforts to find out the nature of the case. By inserting the hand a mass was brought into view which was so thickened and matted together that it was with difficulty recognized as intestines. The peritoneum was rolled out and found to be studded with a great number of tubercles from the size of a millet seed to that of a buck-shot; some of them white, others yellow. The intestine was everywhere beset with them. The transverse colon, thickened and covered with tubercles, was adherent to the peritoneum from side to side, thus inclosing the cavity and giving to the fluid the appearance of being confined within the walls of a cyst.

This ended the operation. The cavity was carefully sponged out with warm corrosive sublimate solution (1 : 5,000) and the wound brought together, dressed with iodoform and dry absorbent cotton.

The temperature never exceeded 100°, and she made an exceedingly quick recovery. Before the sutures were removed there was a great change in her appearance, her demand for food greatly increased, color returned to her cheeks, and before she left the hospital in three weeks she had gained about ten pounds of flesh. She went on gaining and in three months was a strong robust woman, and at this time (June, 1887,) remains so. None of the iodoform entered into the abdominal cavity.

If this were an exceptional case, it would possess no merit worthy of record; but in the light of recent knowledge, it must be regarded of value as a matter of accumulated experience. Other operators have independently observed that cases of tuberculosis of the peritoneum and of the abdominal viscera appeared to undergo a remarkable amendment or apparent cure directly after the performance of laparotomy. This has been observed sufficiently often to regard it as a possible sequence.

Why there is an arrest of progressive tubercularization after laparotomy it is difficult to say. We know too little about the tubercular process, to begin with, to predicate upon it any well-defined explanation; in the next place, there is total lack of precision in the method. We may say that there is no operation of laparotomy for tuberculosis known to-day; we simply know that it has happened, in a discurative way, as a result of errors of diagnosis, as Hegar says. Concerning laparotomy itself there is some confusion.

At the first meeting of the German Gynecological Society

last summer, the subject came up in an irregular way in the discussion of a paper by Elischer on the use of iodoform in severe laparotomies. Dr. Frommel had used the drug in two cases of tubercular peritonitis, and in another case of ovarian tumor with ascites, with small papillæ all over the peritoneum. Hirschberg had cured peritonitis, with tubercular nodules by corrosive sublimate, hence iodoform was not necessary. Dr. Meinert agreed with the last speaker so far as iodoform was concerned, and threw doubt upon the sublimate, as a like result may be obtained by incision and tapping. Dr. Olshausen had seen it cured by incision, and threw doubt upon all that had been said before, by stating what we all know—that it may seem to get well of itself or remain stationary for years. Dr. Saexinger gave curative value to laparotomy, while Dr. Battlehner had seen the same result follow tapping. Finally, Dr. Frommel, who had introduced this subject into the discussion, disclaimed that he had recommended iodoform as a specific for these cases.

The credit of collecting the large mass of material relating to genital tuberculosis in general, and to this phase of the subject in particular, belongs to Hegar.¹ He reports two cases which were either cured or rendered stationary by laparotomy. Another case of apparent arrest, in which nothing special was done, and a laparotomy in a fourth case, too recent to give results. Spencer Wells² has had a like experience. Koenig³ reports a seeming cure, to the date of the report, using iodoform in the toilet of the peritoneum. Neumann⁴ had two cases. Hegar⁵ throws doubt upon the diagnosis of one of these cases, in which the woman remained well after an interval of eight years.

Poten reports a case operated upon by Hartwig, of Hanover. This subject seems to be, from the description, identical with my own. A small portion of peritoneum was excised, and the diagnosis verified by examination. Numerous miliary, granular, and larger growths beset the membrane, which had lost its normal appearance. Under the microscope, a variety ranging

¹ "Die Entstehung, Diagnose u. Chirurgische Behandlung d. Genital-tuberkulose des Weibes." Stuttgart, 1886.

² "Diagnosis and Surgical Treatment of Abdominal Tumors." London, 1885, p. 210.

³ Centralblatt für Chirurgie, 1884, No. 44.

⁴ Centralblatt für Gynækologie, 1886, No. 3.

⁵ "Die Entstehung," etc., p. 7.

from granular nodules to giant-cell formation, with cheesy masses, were observed. Bacilli were found located in the giant-cell masses. Ulceration was nowhere observed. This case was characterized by slightly elevated evening temperature, but the tubercular process was not detected in any other organ. One year after the operation the patient was well, with a great gain in flesh.¹

Lindfors records a case of apparent cure. In this instance there was no mistake in diagnosis, but a cyst was present, complicated by tuberculosis of the internal genitalia and peritoneum, the removal of which appeared too difficult to attempt. This part of the operation was abandoned. The abdominal incision seemed to render the tuberculosis stationary. The case was not characterized by either amenorrhœa or high temperature.²

Upon this brief history of laparotomy in its relation to tuberculosis of the peritoneum, we may base a reasonable hope that in selected cases the operation may prove a bar to the progress of the disease, or, if this is a too hopeful view of the matter, then for a period at least to afford the patient a fair degree of health and comfort. It still further enlarges the field for exploratory laparotomy, and if the secret history of the operation could be written, it would doubtless furnish a numerous array of cases in which similar results had, to the surprise of the operator, been reached. It is safe to assume that opening the abdomen in instances of tubercular degeneration of its lining membrane is comparatively free from danger, and in view of its possible benefit amply justified. Advanced tuberculosis of the internal genitalia and of the peritoneum has about it an appearance of malignancy that would forbid the operation were it not for the hope that the tubercular process might be rendered stationary, as a fatal result frequently follows exploratory incision in sarcoma or papilloma.

In what way laparotomy tends to localize the tubercular process or render it stationary, or possibly cure it, we are not in a position to say. We may, however, in an oblique way throw some light upon the method. In the form of tuberculosis to which we have particular reference, there is a modified and peculiar form of inflammation characterized by serous and plastic exudates which, opening the peritoneal sac, may have

¹ Centralblatt für Gynækologie, 1887, No. 3, p. 33.

² Centralblatt f. Gynækol., No. 10, 1886.

a tendency to arrest, as a series of experiments in the surgical treatment of peritonitis now being made by various surgeons prove.¹ The ascitic accumulation may, and probably does, prove an additional source of irritation, as we have already seen in the debate before the German Gynecological Society—that aspiration or tapping equally with laparotomy has been known to result in apparent cure. Distention by the accumulation, aside from the irritating qualities of its constituents, may act in a twofold way to intensify the morbid process—mechanically by pressure, or as affording a medium for the distribution of the tubercular germs. Bacilli may be found in the fluid just as giant and polynucleated cells may be seen in the ascites of sarcoma. “It is probable that these liberated cells graft themselves on the peritoneum and pass through the diaphragm into the pleura. They behave just as we have seen bacteria do.”² The explanation may exist in thorough evacuation of the fluid. If this be true, we see why tapping, equally with other methods, acts as a cure; and if true, drainage through a large opening and a thorough toilet of the cavity must be the better way. We may trace the process a few steps further. The irritated peritoneum is given rest and allows of a process that belongs *per se* to tuberculosis, namely, the thickening and induration of the surfaces—an encapsulation—and which Hegar³ suggests may be a stage in spontaneous cure.

The tubercular nodules do not always break down, but may form hard calcareous masses which remain in this condition indefinitely. Such masses have been found in the peritoneal covering of the tubes.⁴ Both these processes, encapsulation and calcification, most probably are favored by the spontaneous absorption of the ascites which has been already noticed, or by its evacuation.

One further reference to the natural history of tuberculosis need detain us but a moment. When local, it has been observed to undergo, without treatment, either general or special, a so-called spontaneous cure,⁵ or in other words has become *per*

¹ M. Heitter, *Pittsburg Med. Rev.*, II., 36.

² Hart and Barbour, “*Manual of Gynecol.*,” p. 212.

³ *Loc. cit.*, p. 7.

⁴ Kiwisch, “*Die Krankheiten d. weiblichen Sexualorgane*,” 3d ed., p. 231.

⁵ Geil, “*Ueber Tuberkulose d. weib. Genitalien*.”

mant and may so remain for years. Rokitsansky, quoted by Hegar,¹ says this is very rare. If tuberculosis was proved to exist in other parts, such instances of unalterable localization are not known in literature. Spontaneous so-called cures are more common in men in whom the disease does not so readily extend to the peritoneum, but is more disposed to remain localized at the site of the initial lesion in the genitals than in women, as in the latter there is open communication between the peritoneum and the genitals, a region that in both sexes shows a marked tendency to initial infection: whence its easy transmission to the peritoneum, pleura, and lungs, as I have already shown. When the newly-formed products are in a condition of encapsulation, calcification, or caseous metamorphosis with absorption of effusion, the stand-still ends, as a rule, by the eruption of the disease in other organs with fatal results, or by an intensified renewal of the outbreak in the peritoneum. As an element to give uncertainty to the effect of surgical treatment when followed by arrest of local symptoms of the disease in women, spontaneous cure may be considered of very doubtful value.

It will be interesting to review briefly the form of tuberculosis of the peritoneum in which laparotomy may be expected to give the best results. Kaulich,² in an elaborate study of the disease when confined to the peritoneum, divides it into three groups. The first we may call the acute form, which advances by a series of attacks with pyrexia with intervening lulls, until the entire abdomen has been attacked, without effusion but with retraction of the abdominal walls. There is no record of surgical treatment of this group, nor would it naturally fall under the observation of the laparotomist. The second group is defined by an insidious invasion, slow and even advance without pyrexia, and with ascites as a leading and early trait, and unless we find evidences of consolidation at the apices of the lungs, which is often wanting, exceedingly difficult of diagnosis. Our case belongs to this second group, and it is here that surgical treatment will offer its best results. In this class, also, we get the apparent spontaneous cure, for Kaulich's third group is

¹ Loc. cit., p. 8.

² "Klinische Beiträge zur Lehre von der periton. Tuberkulosis," Prag. Viertelj., ii., 36.

comprised of the second which affords the phenomenon of decrease of effusion with general improvement, but only for a longer or shorter time. If cases belonging to this second group can be brought under treatment before the secondary lung invasion, and the disease thus attacked midway in its advance from the genitalia to the respiratory organs, we have an ideally typical case for laparotomy.

We may go with surgical treatment much further than the second group, as defined by my typical case. Nodular masses may develop on the tubes and consolidate within the folds of the broad ligaments into fixed and irregular tumors, or the tubes may form elongated, round, uneven masses, but without the even, circumscribed swelling of pyo-salpinx. Another form of tube infection is when broad ligaments, ovaries, and tubes are consolidated into one mass in connection with a wide extension of miliary peritonitis. Here Hegar, except in cases in which other and vital organs are involved, would advise salpingotomy and castration. The uterus must be dealt with separately per vaginam with the curette, or caustics and iodoform, although Hegar treated one extraperitoneally. The treatment by laparotomy offers some special difficulties that would not be met with in pyo-salpinx. The extirpation of the tubes is difficult, owing to vascular and close adhesions, and the arrest of hemorrhage uncertain. The tubes are involved in the posterior fold of the broad ligament, and Hegar cautions against breaking through to reach them, as it would probably result in irrepressible hemorrhage. Of course, such extensive breaking down of vascular adhesions implies drainage in the after-treatment. It is doubtful if, in such cases, salpingotomy will meet with general favor. Hegar's results are none too favorable to warrant such severe measures in search of a problematical cure. He had one direct death, the third case developed secondary lung infection, the fourth and fifth cases also. It will be a revival of all the hot discussion over total uterine extirpation in epithelioma with the same complication of after-history.

Briefly, in conclusion, an analysis of my own case with a view to diagnosis will prove useful. Let us consider the first symptom that induced the patient to seek medical advice—the ascites. Reasoning by exclusion, the range of inquiry is not a wide one. The face being free from edema the kidneys are, as a rule, excluded. As a matter of fact they were healthy.

The heart exhibited no error, nor would the ascites point to any heart lesion. The accumulation belongs properly to disease of the liver, as the lower extremities are free from edema; the complexion, the evacuations, and the freedom of the hepatic space from pain, tenderness, or enlargement, prove that this organ is not the source of the effusion. Examining the pelvis, we observe the uterus to be in approximately a normal position and mobility; the vaginal vault free from tenderness, nodes, or tumors; and on external palpation we find this true of the pelvic spaces generally. We have thus eliminated benign cysts or tumors, sarcoma, and other malignant disease of the pelvis, and abdomen as a source of the effusion. Speaking with a due regard for the anomalism of disease, we have only peritonitis left to explain the phenomenon; but the absence of febrile antecedents shows that it can be no ordinary form, while the freedom of the lungs from any indication of tubercles simply renders uncertain what with this indication would be a fairly clear case. Nothing is added to this history for months except occasional abdominal pain due to meteorism, and a pulmonary irritation which was self-limited, and a gradual wasting of the body. Then, on examination, a state of affairs presents which can reasonably characterize but one thing—the free ascites had become encysted. In the whole range of pelvic and abdominal disease, under the conditions named, I know of none that will offer this peculiar anomaly except tubercles of the peritoneum. This disease has one leading trait aside from fluid effusion, and that is plastic exudation; hence the former must be followed after a certain interval by the latter, with the result of widely encapsulating the effused fluid.

Our case further demonstrates that miliary tuberculosis of the peritoneum may antedate the development of tubercular nodes and tumors upon the ovaries and tubes. It may be that this is the rule, and that the latter do not develop upon the pelvic organs except as the result of the evolution from the stage of effusion to that of the adhesive exudate, and these masses being mainly the result of thickening and adhesion in mass, this seems probable. From the attention that the disease will attract, being now but another excuse for laparotomy, points like this will be cleared up.

And lastly, as a positive aid to diagnosis we have the bacilli of tubercle. It may be difficult to find these in the ascitic

fluid. Hegar found the bacillus best in the tubercle itself. It would be reasonable to suppose, however, that a careful search would demonstrate its presence in the fluid.

194 FAYETTE PARK.

PUERPERAL FEVER AND ITS TREATMENT.

BY

JUNIUS C. HOAG, PH.M., M.D.,

Chicago.

(Concluded from page 844.)

ACCORDING to Fritsch, three forms of pathogenetic infection may be recognized. 1. Pathogenetic infection without suppuration, non-localized sepsis, erysipelas malignum internum, or furibund sepsis. This form is generally fatal in from two to five days. It is characterized by softening, flabbiness of the uterus, edema and gelatinous infiltration of the peritoneum, or, in other words, malignant parametritis. 2. Pathogenetic infection with suppuration. Pus is found on the inner wall of the uterus and in the wounds of the vagina and perineum, red thrombi in the veins, incipient purulent peritonitis, light adhesions of the intestinal coils. In this form, as in the above, the inner surface of the genital tract may be intact, even the laceration of the perineum may have healed. In some cases, the uterus and ovaries are in a gangrenous condition. Death occurs in from four to ten days. 3. Peritonitis suppurativa. Sero-fibrinous exudate with thick gelatinous lumps or pus. Inflammation of the serous coat of the intestines, generally diaphragmatic pleurisy. The condition of the uterus varies as in 1 or 2. Subserous infiltration has disappeared or is beginning to. Duration from six to fourteen days or longer, according to the individual's powers of resistance.

By non-pathogenetic infection is meant those manifestations of puerperal processes which are characterized, first, by a slower development and, secondly, by a tendency to localization in the connective tissues. Such cases are far more numerous than those graver ones of pathogenetic origin. Non-pathogenetic in-

fection takes place only when there is a large absorbing surface and an abundance of decomposed secretions to be absorbed. The character of the manifestations differs greatly. In one, there may be high fever, an edematous condition of the external genitals arising from a laceration of the perineum, an abundance of fetid lochial discharge, and general sensitiveness to pressure in the parts. In such a case, the wounded parts may take on a healthy appearance, and as granulation takes place, closing the portals of infection, the symptoms rapidly ameliorate, the fever abates, and in two or three days the patient is convalescent.

In a graver case, the symptoms are more severe, and after a few days of high fever an exudate may be found, perhaps between the bladder and uterus. This begins to suppurate and we have a case of acute suppurative parametritis. In a still more serious instance, the manifestations may be quite similar to those of pathogenetic nature, there may be exudates present or possibly a collection of pus retained in the uterus without any appearance of exudates; but it is to be noticed that such cases are much slower in their development, and whether recovery ensues or not, the course of the disease is much more protracted. Here the source of infection may be sought in the unsanitary surroundings of the patient due to careless attendance. The lochial discharge has, perhaps, been allowed to accumulate and putrefy until it has acquired sufficiently irritating qualities through the activity of the ordinary germs of putrefaction to set up dangerous inflammatory action.

In order to appreciate the readiness with which absorption takes place from the vagina, one need only observe the sudden appearance of carbolic acid in the urine when the agent has been freely used, especially in cases where there was considerable laceration; indeed, absorption of septic matter in some cases seems to take place even where there is an intact mucous membrane. A remarkable case is cited in an Italian journal.¹ A man had intercourse with his wife, who was beginning to convalesce after puerperal fever. Pain was experienced near the frenulum; twenty-four hours later, he had chills. On the fourth day, balanitis appeared, later on erysipelas, lymphangitis, lymphadenitis, and the patient died on the sixth day of general septicemia. Cases of syphilis are on record in which

¹ *Revista Clin. di Bologna*, 1880.

the virus seems to have been absorbed through an intact mucous membrane.

Why, then, it may be asked, does not infection always follow putridity of the lochia? It may be answered, first, because considerable time is required for the discharges to acquire putridity, and during this time plastic lymph is thrown out in sufficient quantity to protect the wounded surface and render absorption difficult or impossible; and secondly, because the bacteria of putridity are of a non-pathogenetic character, that is to say, they develop slowly.

Although it is not possible to discriminate sharply between pathogenetic and non-pathogenetic infection, we may include as belonging to the latter group the following manifestations: 1. Inflammation surrounding a lacerated perineum, vulvitis, and edema of the vulva. 2. Inflammation surrounding lacerations of the vagina, cervicitis, and puerperal ulcers. 3. Endometritis and metritis. In these cases febrile manifestations sometimes appear as late developments and seem to be occasioned by resorption from the endometrium. 4. Parametritis. 5. Some cases of localized peritonitis as a result of extension of inflammation from a metritis or parametritis. 6. Pyemia.

Such a classification is, of course, arbitrary and faulty, but it serves, at least, to assist one in understanding many puzzling features of disease, which were formerly obscured by reason of a misleading term which was applied to a complex of pathological processes depending upon a variety of causes, including, indeed, several separate and distinct forms of disease. The term "puerperal fever" is deceptive because it conveys an idea of something specific and distinct from other diseases—a fact that has led to the gravest errors of treatment.

Great differences of opinion still exist with regard to the sources from which these infecting germs emanate. Some look for them chiefly in connection with sewer gases and the atmosphere of unsanitary localities. Others associate them principally with zymotic diseases. Others still look for them anywhere and everywhere. But after all it is perhaps not so much a matter of importance to discover the source of the germs, as to ascertain their carriers. The atmosphere may be filled with germs, but they are for the most part of a harmless nature and under ordinary circumstances do not threaten the safety of the puerperal patient. Again a patient may lie in the midst of the most un-

sanitary, unsalubrious surroundings and still enjoy complete immunity from disease, provided that proper antiseptic precautions be taken with regard to the patient's own person and her *immediate* surroundings. The physician may be on the *qui vive* to maintain sanitary conditions for the benefit of his patient, he may carefully avoid all contact with patients suffering from zymotic diseases, he may fumigate the room where the patient is to be confined, he may antisepticize the patient as much as he pleases, and still he may entirely overlook one or more of the most important steps of the prophylaxis, thus vitiating all his work, with the most unfortunate results to his patient.

It is related of a careful and skilful physician, who always endeavored to exercise the most accurate antiseptic precautions, with the utility of which his mind was thoroughly imbued, that after applying the forceps in the case of his own wife, she was seized with a violent attack of septic fever, the occasion of which he was for some time unable to explain, until it was discovered that the dressing gown which he was wearing when he applied the forceps was the same one which he had worn at an autopsy two weeks previous. Such an occurrence seems at first thought inexcusable, yet many a physician is guilty of just as great carelessness in some other direction.

It is not always the physician or surgeon who makes the greatest parade of antiseptic measures that has the best practical results; nor, in the case of hospitals, are the statistics always best in those institutions in which the most complicated procedures are adopted for the prevention of septic infection. In general, it may be said he succeeds best in this regard who bestows the greatest attention on those possible carriers of infection which come into the closest contact with the patient. Semmelweis thought that the agent of infection was the decomposed animal material and that the carriers were the exploring finger, the operating hand, the instruments, the bed linen, the atmospheric air, the sponges, the hands of the nurses and attendants, the bed-pan—in a word, everything which after contact with decomposed animal matter comes into contact with the patient's genitals.

Above everything else, the hands of the physician and his instruments should receive the most careful attention—in this direction it is impossible to be too particular. Forty years ago, Semmelweiss plainly showed that those patients which were con-

fined without having been subjected to the vaginal examination enjoyed almost complete immunity from puerperal fever, because they were spared the most fruitful of all sources of danger—the physician's hands and instruments. Nothing seems more simple than the means and methods of personal disinfection; and yet there is no lesson more difficult to inculcate. In Vienna, the moral was pointed many years ago, but the lesson is hardly learned yet.

In the Vienna Lying-in Hospital, the midwives manage all the non-instrumental labors, and nowhere can more skilful manipulation be observed in the conduct of such cases; nevertheless, one of the hospital assistants recently informed the writer that his greatest task was to make these midwives disinfect their hands properly. Scarcely one-half the parade of antisepsis is made as is done in other hospitals, but disinfection of the hands and proper attention to the cleanliness of the bed is *de rigueur*, and the results speak for themselves, especially when one considers the immense amount of work done.

In this hospital, the writer once witnessed the management of a moderate case of post-partum hemorrhage. As usual, the case was in the hands of a midwife, but when the hemorrhage began, and she observed that a speedy termination of the third stage of labor was necessary, she sent for one of the assistants, that he might detach the placenta. The assistant was engaged at the time with a private class of students whom he was instructing in the art of craniotomy—an operation which he demonstrated on the cadaver with a dead child. His hands were covered with cadaveric matter, but on reaching the hospital ward, he prepared to introduce them into the uterus. He first removed his coat, then rolled up his shirt sleeves above the elbows, stationed himself at the foot of the patient's bed where he could observe the amount of hemorrhage, and then slowly and deliberately made his antiseptic ablutions, which consisted in a most thorough cleansing of the hands, wrists, and forearms with sublimate solution, soap, and brush, the last-named article being employed most vigorously. This procedure consumed at least five minutes, and upon its conclusion he delivered the patient of the placenta, not hesitating to perform the operation even under these remarkable circumstances, for abundant experience had shown him that he might safely do

so, although he could readily have summoned a skilful colleague.

A very eminent English obstetrician, Dr. John Williams, of London, informed the writer that he would not consider it prejudicial to a patient to attend her in labor, although he had on the same day visited another patient suffering from a severe attack of puerperal septicemia.

Allusion has already been made to the revolutionary effects upon obstetrical practice which was directly due to Lister's discoveries. These include not only the management of the diseases of the lying-in period, but also the prevention of such diseases by means of an adaptation of Lister's principles to obstetrical practice, in so far as these principles are applicable. As we have seen, Semmelweiss all but succeeded in completely anticipating the brilliancy of Lister's great work; but the latter's teachings found ready acceptance at a time when the former's had almost passed out of recollection. It is true that here and there we find the records of practices very similar to the most approved measures of prophylaxis as employed to-day, but always with this difference—they were incomplete and lacking in some of the most essential details of correct treatment. They were faulty because the real object to be attained was but feebly understood. Lister supplied the missing links in the chain for knowledge.

In 1872, Langenbuch and Schede, two surgeons, made one of the first attempts to adapt Listerian principles to obstetrical practice. To their surgical minds the puerperal uterus was very like the cavity of an abscess, and accordingly they proposed to drain it. For this purpose they employed rubber tubes which were introduced as far as possible into the uterus, and then the cavity of the organ was douched with a three-per-cent solution of carbolic acid once or twice a day.

Fritsch claims for Bischoff the credit of being the first to introduce in an obstetrical clinic a rational and complete method of prophylaxis, which he did in 1875, after a visit to England. His system included a full bath before labor and repeated douches during its progress with a two-per-cent solution of carbolic acid. After the completion of labor, superficial wounds were treated with a ten per cent carbolic acid solution, while deep wounds were closed under the spray. A tampon soaked with a ten-per-cent solution was left in

the vagina, and frequently renewed. In special cases, intrauterine injections were employed two or three times a day with a two or three per cent solution. Vaginal douches of the same strength were used in all cases, while the greatest possible attention was given to every detail of cleanliness.

In 1877, Chamberlain, of New York, recommended long glass nozzles for use in irrigation of the uterus. With the idea of applying Listerism to obstetrical practice, Schüking in the same year suggested a plan of permanent irrigation. For this purpose he used a catheter and a perforated metal drainage tube. These were placed side by side, enveloped in carbolized gauze, and then introduced into the uterine cavity as far as possible. An antiseptic fluid was injected through the catheter, brought into contact with the uterine walls by means of the gauze, and then carried off through the metallic tube. The idea of this method was that the entire genital tract was to be regarded as a surgical wound, to be treated as nearly as possible according to Listerian principles. Antiseptic occlusive bandages being out of the question, he introduced what he regarded as an entirely satisfactory substitute, although he found few followers therein.

In 1879, Matthews Duncan wrote on the importance of antiseptics, and declared himself opposed to drainage. He laid the greatest stress on prophylaxis, cleanliness, and disinfection, while he counselled caution in the irrigation of the uterus.

In the same year and the succeeding one, Dworak, Frankenhäuser, Stadtfeld, and Schroeder recommended the use of the spray.

Iodoform next began to attract attention. In Buda-Pesth, it was used by Mann, beginning with the year 1881.

In the year 1881, Koch published the result of his experimental researches with regard to the comparative value of the various germicides. He showed that a one-per-cent solution of carbolic acid is not strong enough to destroy bacteria even after they have been exposed to its action for fifteen days. Even with a four or five per cent solution two or three days' time is necessary for the destruction of the bacteria.

The experiments of Wolffhügel and Knorre also proved that the disinfecting lubricants hitherto in use are quite inadequate to produce the desired result and that carbolized vaseline should contain at least ten per cent of carbolic acid. Sublimate in

strength of 1 : 1,000,000 was shown to arrest the development of the bacilli of splenic fever in a remarkable manner, while in the strength of 1 : 300,000 it is sufficient to destroy it altogether. For the ordinary purposes of surgery and obstetrics, a solution of 1 : 1,000 or 1 : 2,000 is quite powerful enough to destroy even the most resistant micro-organisms.

Upon the publication of these experiments, sublimate soon became *par excellence* the disinfectant of the day and is of course greatly in vogue at present, both in surgery and obstetrics. But, unfortunately, just when the problem of disinfection seemed to have been satisfactorily settled, it was found that the employment of sublimate is far from being without danger. Numerous alarming cases of mercurial poisoning soon began to appear, both in hospital and private practice, not a few of which resulted fatally. The journals have been reporting such cases for several years and many investigations have been instituted with a view to ascertain how poisoning takes place and how it may be avoided.

Keller¹ reported the results of the use of sublimate in the obstetrical and gynecological clinic in Berne. In this clinic sublimate has been in use since January, 1884, and has been employed in the following manner: 1. Before and after internal examinations of pregnant women (whether during labor or at any time before its beginning) the vagina is washed out with one-half a litre of sublimate solution in the strength of one-half per mil. After the completion of labor, a similar douche is given with one litre of the same solution. The external genitals are likewise cleaned, and a record of each examination is preserved. 2. After operative procedures and tedious labors, especially when the patient has been subjected to numerous examinations, and in all cases of fetal decomposition, an intrauterine injection of from two to three litres of a one-per-mil solution is given. 3. During the lying-in period vaginal injections are employed when indicated by a fetid discharge, or when intrauterine injections have already been given. The vaginal injections are given in various degrees of frequency; sometimes as often as every three hours, the one-half-per-mil solution being the one used. 4. Intrauterine injections are given during the lying-in period, but only in cases of high fever with fetid discharge, or when previous intrauterine manipulations have been necessary.

¹ Keller, "Zur Sublimatfrage," *Archiv für Gyn.*, 1885.

The disinfection of the accoucheur includes careful cleansing of the hands with nail-brush, soap, and sublimate solution, while no one may examine a patient whose hands have been in contact with infectious materials within a space of twenty-four hours preceding the examination. For irrigators, glass vessels with glass nozzles are preferred. In order to ascertain the effects produced upon the patients by such methods of disinfection, the urine of eighteen patients was analyzed, and mercury was found in twelve instances, while albumin was discovered in most of the cases where mercury was present.

From these results the clinical investigator deduced the following conclusions: that sublimate is a sure disinfectant, but its use is not unattended with danger, since it exerts an injurious effect upon the kidneys; that the prudent application of sublimate in solutions not exceeding the strength of one per mil, and exhibited in moderate quantities, is hardly dangerous, or only moderately so.

Among many similar observations mention may be made of experiments by Gustave Braun and others in Vienna, who observed that after even moderately copious douches of sublimate in puerperal cases, mercury could be very uniformly discovered in the feces, and that, too, within a period of twenty-four hours after its exhibition. Furthermore, several deaths took place among the patients in the Vienna clinic which seemed to be clearly attributable to the use of mercury; as a result, its use has been greatly restricted by some of the hospital physicians, and by others it has been quite abandoned, in so far, at least, as regards its use in the douche, particularly in the first days succeeding accouchement, when the uterus is still large and flabby.

Referring to the use of sublimate, Koch says: "Its poisonous properties alone prevent its universal application; but to offset its danger, we must consider its rapid and complete action. It is not necessary to allow it to exert a continuous action, for it may be removed after a short time by copious douches of water."

If used at all, care should certainly be taken to remove the surplus from the uterus by the strong pressure of the hand. Again, its use is to be avoided in cases where it is likely to be absorbed in large quantities through lacerations of the cervix, vagina, and perineum. As, indeed, there are always abundant facilities for its absorption after even a normal labor, it would

doubtless be much more prudent to limit its use to cases where a powerful antiseptic is strictly indicated, as where there is marked elevation of temperature some days after labor, with every other indication of puerperal fever. Finally, it should only be employed in an attenuated solution not stronger than one part in 2,000, and in moderate quantity, rarely exceeding two quarts.

At a recent meeting of the Obstetrical Society of London this subject was discussed, and the opinion prevailed that sublimate, although a most useful disinfectant, is too dangerous an agent to be relied on in obstetrical practice.

The other disinfectants most in use at present are carbolic acid, thymol, iodine, iodoform, boracic acid, salicylic acid, and alcohol. Concerning the relative value and safety of these agents, there is considerable difference of opinion. They are all useful, but it is perhaps as necessary to know how and when to use them as which to choose, for very different results are obtained in their use by different individuals.

According to Buchholtz, sublimate is ten times as active as thymol, thirty times as active as salicylic acid, and one hundred times as active as carbolic acid; accordingly there is no agent to compare with it when the strongest possible antiseptic action is required.

Carbolic acid, in the strength of two per cent, may be used in large quantities if care be taken to expel what remains in the uterus after the douche has been given. Carbolic acid possesses one great advantage over the other disinfectants in that it has become a household article, and may be found in nearly every habitation.

Thymol may be used *ad libitum*. It is most highly esteemed by Carl Braun, who employs it in large quantities, though by no means to the exclusion of carbolic acid and sublimate.

A solution of iodine is much used in England, both in hospital and private practice. It is employed as well for douching as for disinfection of the hands. A small bottle of a concentrated aqueous solution may be carried in the pocket, and of this enough is added to water to give it the color of sherry wine.

With regard to the douche it may be said that its use is especially necessary in hospital practice when the patient is subjected to dangers which scarcely menace a woman in a com-

fortable home; but there can be no doubt that it is used in many institutions to an entirely unnecessary and even injurious extent.

In some obstetrical hospitals which are largely frequented by students, and in which the patients undergo numerous examinations, the rule is to wash out the vagina after each examination, and keep up the practice during the lying-in period. Not only do such procedures serve to remove the natural secretions which are intended to lubricate the passages, but they also invite opportunities for infection by means of the irrigator or the attendants' hands. Besides, in the lying-in period the introduction of the nozzle serves to re-open the little fissures made by the descent of the fetus, thus affording means for absorbing the discharges, which of itself is frequently sufficient to set up a temporary fever. Such fissures and abrasions, when undisturbed, quickly glaze over, so that absorption through them becomes almost impossible.

In other hospitals, where the strictest possible attention is given to the matter of cleanliness and sanitation, the douche is not used at all unless especially indicated by febrile manifestations, the results being equally good or even better than in those institutions where it is used so frequently.

Judgment must also be exercised in interpreting the meaning of a rise in temperature, for a mere elevation of temperature, even when considerable, is by no means to be regarded as indication for the use of the douche. Crédé, who is a most conservative obstetrician, one who uses the douche very infrequently, and when he does, employs for the most part merely boiled water for injection, says that in the case of a lying-in patient who has suffered extensive lacerations in the genital tract, the appearance of elevated temperature need never excite alarm, provided the pulse is not much increased in frequency; and that in such cases one may, with tolerable certainty, exclude the idea of infection.

Between such extremes of practice with regard to the use of the douche as are above referred to, every possible gradation of custom may be found; but the tendency of the day is to restrict its use. When used, the introduction of the stream may be greatly facilitated by the employment of glass nozzles which, being provided with the proper curves, are so readily

introduced as to materially lessen the danger of re-opening such fissures as may be present.

For vaginal irrigation a nozzle with a single curve and a bulbous fenestrated tip is very useful, or a hard rubber one of the same form will answer a similar purpose. The best form for uterine use has two curves, is somewhat flattened toward the extremity, and is provided with numerous small openings to allow the stream to pass out, while provision is made for regurgitation by means of a sulcus on the upper and under sides of the flattened portion. Such a nozzle can readily be introduced into the uterine canal without the guidance of a finger in the vagina.

A mode of treatment which is worthy of careful consideration was introduced some time ago in the Vienna Clinic, by one of the assistants, Dr. E. Pritzl. Instead of altogether relying on the use of the douche in the treatment of puerperal fever, Pritzl makes a practice of vigorously scraping out the uterus with a blunt curette, preceding and following the treatment with the douche. In this way he is able to remove infectious material which could scarcely be reached by the disinfectant of the douche, especially in those cases where several days have elapsed since the occurrence of infection.

The writer witnessed this operation in some eight or ten cases which he kept under observation until the patients were discharged. In every instance the temperature had risen above 102° and from twenty-four hours to five days had elapsed subsequent to confinement. In every case a marked fall of temperature was noticed, the mercury sinking to the normal point within twelve hours, after which in some instances it never rose again, in others it rose once or twice, but quickly subsided to normal again. In applying this treatment, a curette of the Sims pattern was used, but one with a long handle and a very large scraping surface. No anesthetic was given, although the treatment is rather painful. No bad results of any kind followed. The patient was placed on the side during the operation.

Prophylaxis should begin before labor sets in. The patient should take frequent sitz or sponge baths. At the beginning of labor the external genitals should be most thoroughly washed with soap and a good disinfectant solution. From first to last the greatest cleanliness should be maintained about the patient; the sheets should be frequently changed, the nap-

kins often removed, and fresh air allowed free access to the room.

Vaginal examinations should be avoided as far as possible, and it is the writer's conviction that in many cases these examinations are wholly unnecessary, as, for instance, in patients whom the physician has previously attended in labor and knows to be free from pelvic and other deformities. A careful external palpation will, in most cases, suffice to accurately determine the character of the position and presentation—indeed this method gives much more satisfactory results than a vaginal examination. There can be no doubt that a fruitful source of danger lies in frequent vaginal examinations.

As regards lubricants for the exploring finger, they may be for the most part dispensed with, for repeated examinations are not generally necessary; if they are, a good antiseptic lubricant, such as a ten-per-cent carbolyzed vaseline, may be used.

Another important point is to avoid rupturing the membranes—a procedure which is seldom required, but one which may be productive of much harm.

The management of the third stage of labor is a most important consideration. In his anxiety to terminate labor, and thus relieve his mind of that bugbear post-partum hemorrhage, the physician often makes light of introducing his hand into the uterus and hastily removing the placenta—an act which not only subjects the patient to some danger from infection introduced by the hand, but also results frequently in the failure to remove in their entirety the placenta and membranes which would otherwise have been completely expelled by the natural forces of the patient.

Any one who has witnessed in skilful hands the application of the Dublin or Credé's method of expelling the placenta, cannot fail to be entirely convinced of the superiority of these methods over any plan which involves the presence of the hand in the vagina or uterus. In practising these methods, the physician should be deliberate and gentle in his manipulations. An exhibition of great force is not necessary, but such force as is required must be properly directed and exercised only when the uterus is in a state of *contraction*, otherwise it will largely fail to profit the patient. He who fully understands the management of the various degrees of post-partum hemorrhage will neither be precipitate in his actions nor deem it necessary to

resort to a painful and often uncalled-for operation, simply because the patient is losing a little blood. If one fully understands the methods of external manipulation, he will seldom find it necessary to introduce even a finger into the vagina for the purpose of removing the placenta.

After the completion of the third stage, it is a common, but by no means necessary practice to wash out the vagina. If strict attention has been previously paid to all matters of cleanliness, the douche will in most cases be quite unnecessary, but the external genitals and the surrounding parts should be carefully washed in a thoroughly antiseptic manner. Further than this nothing need be done throughout the lying-in period, unless demanded by pathological conditions.

In giving his ideas of the treatment of puerperal fever, Matthews Duncan¹ says that the search for "cures" is as yet a wild-goose chase, and that puerperal fever is to be *managed* rather than treated.

The writer has nothing new to offer with regard to the administration of medicines. In the large obstetrical hospitals, the use of antiseptics has largely superseded the employment of antipyretic doses of quinine, antipyrine, etc. In a recent publication² containing a large number of temperature tables, Credé points out the fact that quinine in his hands failed entirely to give satisfactory results, although used on a large scale. He prefers to depend on the bath when he desires to reduce temperature, but he does not use it early in the attack.

Good nursing, proper feeding, hot applications, moderate stimulation, and tepid spongings are among the most important measures. Opium remains the sheet anchor, though in many cases it will be found advantageous to substitute enemata of chloral and belladonna. In general peritonitis, the inflammation of the serous coat of the intestines paralyzes the action of the muscular fibres; the bowel then becomes distended with gas, until finally it presses upon the stomach, causing singultus and vomiting; the latter being frequently so severe and continuous as to excite suspicion of an *ileus volvulus*. The writer has observed a case of this kind in which several excellent diagnosticians concurred in such an error. In this class of cases, the

¹ Matthews Duncan, "Treatment of Puerperal Fever," London Lancet, 1880.

² Carl S. F. Credé, "Gesunde und kranke Wöchnerinnen," 1886.

peristaltic action seems to be reversed and very irregular, and incessant vomiting becomes the most threatening symptom. This irregular peristalsis may be controlled, to some extent, by large doses of chloral and belladonna given in enemata. In this way vomiting may be checked, the discharge of flatus is promoted, and the patient is enabled to enjoy more refreshing sleep than is produced by the administration of morphine.

Viewed from a prophylactic standpoint, the antiseptic douche is of immense value; but, to be of service, it must be used promptly. If infection has taken place and the multiplication of the infecting germs has been going on for several days, until they have made their way into the deeper tissues, then the trouble is beyond the reach of any disinfecting solution, and whether it be used or not is a matter of indifference.

It is impossible to lay too much stress on the matter of cleanliness both as regards the patient and the physician; and by cleanliness is meant surgical cleanliness. If the patient's external genitals are not as scrupulously washed before the child is born as the abdomen before the performance of laparotomy, the physician has only himself to blame if his perineal operations fail to succeed.

In certain hospitals, as for instance the Queen Charlotte Hospital in London, the attempt is even made to sterilize the bedding (including the mattresses) by subjecting it to a high degree of heat; but it is much better in large institutions to discard the ordinary mattresses altogether. In the Vienna Lying-in Hospital this is done, nothing being used but an ordinary woven wire mattress with several thicknesses of folded blankets. In the above-mentioned London hospital, they go so far as to allow only one patient at a time to be confined in a room, after which in all cases, whether the patient passes through a normal labor or not, the room is disinfected by burning sulphur in it. Besides this, the walls and floors are frequently scrubbed with disinfectants, and yet the results are scarcely if any better than in the enormous Vienna Hospital, where such precautions are impossible, but where the minutest and most painstaking attention is given to everything that comes into close contact with the patient, which after all is the most important point, for it is very doubtful whether under ordinary sanitary conditions infection ever takes place from the atmosphere itself.

Neither is it likely that self-infection, in the strictest sense

of the word, ever occurs. The lochial discharge, it is true, on being exposed to filth and contact with the air may putrefy and become a source of infection, but this is not self-infection. Credé says that daily experience is entirely opposed to the theory of self-infection and adds that, if self-infection were possible, it would occur with very great frequency, because solutions of continuity of the tissues take place during birth in nearly every instance, while decomposing materials are always found in the genital tract of the lying-in patient. Even the most skilful obstetrician cannot guarantee the success of the most carefully planned protective measures, but some, making a boast of so doing, attribute their failures to "self-infection."

It is the belief of some that the atmosphere with its infinitude of germs is the principal source of danger to the puerpera. According to their idea, the ever-present germs find easy entrance through the patulous vulva and this is their justification for the frequent irrigations to which their patients are treated during the post-partum period. The answer to this is, that these ubiquitous germs are, for the greater part, entirely harmless. Under ordinary circumstances, the drying process to which they are exposed in the air is of itself sufficient to divest them of their power of rapid multiplication. Fritsch observes that in every case of laparotomy some of the atmospheric air finds entrance to the peritoneum without exciting any disturbance whatever.

Puerperal infection, then, can only take place through the penetration of infectious germs from without. Fritsch states that there is no especial danger to be apprehended in cases where there is a macerated fetus present, and that were it possible to absolutely exclude infectious germs from the patient, the contents of the uterus would remain as free from decomposition post partum as does the macerated fetus ante partum. Further, there is no direct connection between puerperal fever and the retention of membranes and the placental fragments in the uterus, but a threefold indirect connection. 1st. Improper management during the post-partum period may result in hemorrhages and the consequent weakening of the patient's system. 2d. Imperfect contraction of the uterus tends to prepare the tissues for inflammatory processes. 3d. Incomplete separation of the placenta and membranes leaves within the uterus materials which may become putrid and thus lead to infection. But there is no danger of infection in any of these cases

unless the infecting agent is introduced from without. Hence it is to be remembered that the patient is subjected to the greatest danger by unskilful management of the third stage of labor and the lying-in period, because such unskilful management results in producing the most favorable conditions for the development of dangerous germs.

CORRESPONDENCE.

REMARKS ON INTRA-PERITONEAL ADHESIONS,

ELICITED BY DR. R. BATTEY'S CRITICISM ON AN ARTICLE OF MINE,
READ BEFORE THE AM. MED. ASS'N IN 1885.

BY

B. E. HADRA, M.D.,
Austin, Texas.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

IT is less for personal gratification and defence than in the interest of the important subject treated of that I ask the attention of the readers of this JOURNAL to a criticism of Dr. R. Battey on an article of mine published over two years ago.

In the discussion which followed the reading of a paper by Dr. Hunter at the meeting of the American Gynecological Society in 1886, and which paper was entitled, "Persistent Pain after Abdominal Section," Dr. R. Battey said: "In a paper read before the American Medical Association at New Orleans, the position taken by the author was that in such cases (abdominal pain without disease of ovaries and tubes) the mere passage of the hand into the abdomen and bringing it in contact with the peritoneum produced such a wonderful impression and influence, that one might be led to believe that the proper treatment for these cases of pain and erratic disease was to open the abdomen, pass in the hand, and run it over the peritoneum a few times, and in that way cure his patient."

This passage must have reference to me, I having been the only one who read a paper on this subject.

It is not very difficult to prove that Dr. Battey has misconstrued what I have said, and the mere citation of some passages,

taken from my article as published in the *Journal of the American Medical Association* (June 20th, 1885) will show it. I there, in cases where the appendages are found sound, attributed a good deal of trouble to adhesions within the peritoneal sac. "A limited peritonitis, caused by the introduction of obnoxious or virulent elements through the tubes, may at any point lead to adhesions which might be very slight, yet interfere sufficiently with the functions of the different organs to justify the thought of the operation (Tait's), and not only the bowels, but also the ovaries and tubes may easily be disturbed in their action by frail and seemingly insignificant threads. The conclusion to be drawn is obvious. In making Tait's operation, the closest attention should be paid to searching for the above-named changes, as it might even happen that these bands be broken up without attracting the notice of the operator. When the appendages are found healthy or but slightly changed, we should make a thorough examination of every organ, each for itself, which might enable us to find a solution of the mystery in detecting adhesions somewhere where we might have least expected them."

After this I proceeded: "But the object of this paper goes further; it is to call attention, also, to the adhesions inside of the peritoneal cavity *above the pelvic organs*, and especially between the omentum, parietal and visceral peritoneum. A peritonitis, once set up, is liable to deposit its poison anywhere within the sac, and to cause circumscribed adhesive inflammation anywhere. This fact, well known to the pathologist, has been somewhat neglected by the gynecologist. A woman has an inflammation after dysmenorrhea, or in child-bed, not severe enough to claim the dignity of peritonitis. Nevertheless it is such, and after a while, when she has been pronounced well, she will complain of pain in the abdomen, either all over or only in a limited spot, most generally in the left epigastrium. The bowels become flatulent, which may form the main complaint. These pains grow in intensity until we are induced to make Tait's operation, when we are surprised to find the uterine appendages normal.

Looking over our authorities, we find many ingenious explanations for the pain in the epigastrium, by nervous anastomosis, etc., but in reality it is nothing more than a chronic adhesive inflammation. . . . We can further understand that the peritoneal coverings of liver, spleen, and stomach become involved, and looking through Tait's list of laparotomies, we can readily see that the marvellous cures of liver and spleen affections are the result of unavoidably breaking up adhesions in the attempt

to examine these organs. A case, the history of which I will give below, taught me that in some forms of latent peritonitis there are strings of a lymphatic nature which run between the different surfaces of the peritoneum, and which filaments, I am satisfied, shrink up after death, but are during life the vehicles of lymph or plastic and irritative material. These strings might be the first stage of the adhesive peritonitis, or they may persist in this form and give rise to many of the most common complications enumerated before." From what was said in regard to the adhesions within and above the pelvis, I concluded as follows: "Should these views become verified by further experience, we will then proceed in about the following way: "Laparotomy, minute examination of all the pelvic viscera, with special attention to adhesions, breaking them up, insinuating hand upwards with sweeping movements between omentum and bowels, and between omentum and parietal peritoneum throughout its entire area. . . . Particularly should this operation be tried in young women, to save, if possible, the functions of generation, which consideration should warrant the risk of a second operation. . . . My object is not to disparage Tait's operation, but in doubtful cases to let the unfortunate woman have the benefit of the doubt, etc."

Now these are the views I endeavored to bring forth at the meeting, and I do not see how Dr. Battey could find in them the least occasion for his sarcastic remarks. But, as already stated, it is not personal grievance at all that prompts me to appear before the profession once more on the same subject. In my opinion, the points involved should be treated with more earnestness, and I am gratified to see that others are working in the same direction. Dr. Polk, of New York, in a discussion before the Obstetrical Society of New York, expressed most perspicuously and pointedly the leading idea, and I quote from this JOURNAL's report (April, 1887) the following passages: "Later, in four such instances (questionable disease of the uterine appendages) he (Polk) had contented himself with simply loosening the adhesions, of possibly freeing the fimbriæ, washing out the tubes and returning them to the pelvic cavity, at the same time freeing the ovaries from their abdominal attachments, and he believed that it was in that direction our efforts should tend, rather than towards absolute mutilation." Against the dissenting remarks of Dr. Wylie, Dr. Polk said "that he failed to see why adhesions were not the cause of the symptoms in many cases; in fact, why they did not constitute the chief mor-

bid factor in many. These adhesions had the power of contracting around tubes and around ovaries, even as they did about the intestines, or about the mucous tubes, where they had the power of creating disease by impeding the functions of the tube involved." In closing the discussion, Dr. Polk reiterated his belief "that the time has come when we should, in certain cases, take the risk of merely breaking up adhesions, washing and dropping the organs."

Thus Dr. Polk takes exactly the same position in regard to the pelvic viscera that was taken in my paper. He adds the very important step of washing out diseased tubes which, of course, deserves the most attentive consideration. As will be seen from the quotations, I went farther in respect to chronic adhesive peritonitis, extending its morbid effects into the abdominal portion of the peritoneal sac and its contents; and I even now, after Dr. Battey's haughty criticism, do not see why I should not be in the right, theoretically. Practically, I have satisfied myself of the existence of such adhesions. Well-defined abscess cavities, formed by peritoneal adhesions, are, it is true, only rarely found higher up in the abdominal part of the peritoneal sac; but if more attention be paid to it, pockets will often be detected, not formed by distinct abscess walls, but by light adhesions of the peritoneum to the other structures, omentum, bowels, etc. There a larger or smaller quantity of turbid fluid, the remnant of peritonitic effusion, may persist, either because its nature is adverse to absorption, or because the peritoneum has changed, so that it, at least in the portion surrounding this accumulation, becomes unable to resorb. To accomplish a cure it is necessary, then, only to break the adhesions, and to offer this fluid an escape into the better preserved peritoneal folds, or a simple wash, so as to remove the fluid from the abdominal cavity. Either of these acts is often performed unknowingly in laparotomies, and the advice to search for adhesions is aiming at nothing further than a more intentional and more rational procedure.

But simple string or band-like adhesions on the mentioned localities may suffice to cause a great deal of trouble, by interfering with the motions of the viscera, and also by exerting undue traction on the filaments of the sympathetic nerves. In this case, the breaking up of the adhesions will also be the correct remedy.

In conclusion, I will state again that I never dreamed of saying a word against the removal of diseased uterine appendages; but if I have learned anything since the writing of the involved sub-

ject, it is only to strengthen my belief in what so many others of greater experience insist upon more and more, namely, that closer study and stricter diagnosis will make this ultima ratio a less frequent operation than it is now, especially in certain quarters. My article before the American Medical Association was nothing more than a contribution to the vast discussion the subject demands.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, March 18th, 1887.

DR. A. F. A. KING, *President, in the Chair.*

DR. W. W. JOHNSTON read the history of a

CASE OF SPONTANEOUS EXPULSION OF A UTERINE FIBROID
WEIGHING TWO AND A HALF POUNDS,

and presented a specimen.

History.—Dr. Bowen gives the following history of the case: He was called in June last and found his patient suffering from metrorrhagia. He made a vaginal examination, and found the uterus normal. The hemorrhage soon ceased. He did not see her again until March 9th, 1887. She said that she had had no hemorrhage during that interval. She was at this visit complaining of pains in the uterus like labor pains. There was tenderness over the uterus, and fever. Dr. Bowen called Dr. Johnston in consultation.

Dr. Johnston found the patient lying on her back, much exsanguinated and with feeble pulse. There were large coagula lying in the bed, and between her thighs a large tumor, looking, at first sight, like a five months' fetus. The tumor was found to be attached to the uterus by a long pedicle about the thickness of the little finger. The fundus of the uterus, to which the pedicle was attached, could be felt protruding through the cervix. The pedicle was divided and the inversion of the uterus was corrected, after which the patient was much relieved in her mind. Antiseptic intrauterine injections have been employed, and at this date (ninth day) she still has some fever, but her condition is good.

This was the largest tumor spontaneously expelled which Dr. Johnston had been able to find recorded. The uterus had not been completely inverted, and was not a large one. The cervix

promptly contracted, but did not feel as it does when a fetus has been expelled. The pedicle was about five inches long. Its gross appearance was like a uterine fibroid. The outside was soft from decomposition.

Within the last decade, about twenty-five cases of spontaneous expulsion of fibroid tumors from the uterus have been reported. In some the tumor was not only extruded, but completely detached; in others, it was expelled from the vagina, but maintained its attachment until it was severed. The histories of the individual cases are much alike. Menorrhagia, metrorrhagia, for a variable length of time, then labor-like pains, hemorrhage, and the expulsion of the tumor. In many of the cases the expulsion was spontaneous, but followed the introduction of tents or other dilatation of the cervical canal. In others, it followed the administration of ergot given for the hemorrhage. In some the tumor was sound, in others in a sloughing condition.

When the process of uterine contraction is not acute (if we may be allowed the expression) but chronic, that is, slow and extending over a considerable time, sloughing of the tumor occurs, followed by the discharge of necrosed fragments, septicemia, and death, or recovery. A fibroid has been known to have become attached to the anterior wall of the abdomen, and to have been discharged through it.

After expulsion, the uterus undergoes involution. No case has been found in which the tumor was as large as the one here presented, which weighed, after removal, two and a half pounds.

DR. S. C. BUSEY read a paper entitled

SOME RARE CLINICAL OBSERVATIONS IN OBSTETRIC PRACTICE.¹

DR. A. F. A. KING opened the discussion. He said he had more to commend than to criticise in the paper. The cases would have been "puzzlers" to the inexperienced, as indeed they were, to some extent, to Dr. Busey.

In the first case, Dr. Busey said it was impossible to recognize the presentation "without the introduction of the hand into the vagina." He would like to suggest that by abdominal manipulation between the pains the position of the fetus might, at least, have been made out. This method of diagnosis is not often enough employed; for, though it requires skill, not infrequently the whole contour of the child can be made out, and both the position and presentation ascertained without a single vaginal examination. The remark of Dr. Busey would lead us to suppose that vaginal examination was the only method we had of making a diagnosis.

It is stated by good authorities that it is not safe to rupture the membranes at the height of a pain, because with the gush of water which follows the funis is apt to descend.

The caul sac was probably formed as has been explained.

In the second case, the same remarks as to diagnosis by abdominal palpation would apply.

¹ See original papers in this number.

The elongated bag of waters, which is here spoken of, is common enough in transverse presentations, when the fetus is lying across the pelvic inlet without touching the internal os.

It is also the case in footling and arm presentations. Madame LaChapelle was right when she said that the "flat sac" betokened but little danger.

In this connection, he would like to mention the importance of the "tactus eruditus" in obstetrics, and of the necessity of cultivating it in students. The only way to accomplish this is to take the students through a hospital ward and let them examine case after case in succession. If they only get a chance to make an examination now and then, they forget between whiles.

Dr. Busey does not tell us why he terminated labor so rapidly by bringing down the other foot. It is usually considered better not to do this until labor has progressed further.

In the third case, the attendant was unfortunate in his diagnosis. There are cases on record in which the bladder has contained an enormous quantity of urine. One case he recollects was reported to contain nine pints.

"4th. Labor pains mistaken for the pains of vesical repletion." A very unusual occurrence, as Dr. Busey says. There are cases in which vesical tenesmus during labor pains adds greatly to the suffering of the woman. A distended bladder is often the cause of a tardy labor, which may be rapidly terminated by drawing off the urine.

We have all, probably, met cases in which we considered the bladder empty when a few ounces of urine have been drawn off with the catheter, and have been surprised when a gush of urine followed the expulsion of the child. Either the urethra is stretched in these cases and we do not get well into the bladder, or the catheter with but one fenestrum only evacuates the urine from one side of the bladder. Under these circumstances, it is well to turn the point of the catheter downwards, with the view of emptying the urine from any pouch there may be in that direction. If we could obtain the statistics of midwives and others who had made the mistake here mentioned, it is probable that the complication would be found much more common than we expect.

"5th. Colpocystocele complicating labor." Meigs mentions a similar case. The labor was complicated by vesical tenesmus. He found a vaginal tumor which he thought was the cause of the trouble. He introduced a catheter two inches, but got no water. On pressing the vaginal tumor, with three fingers in the vagina, one or two sudden gushes of urine from the urethra caused a disappearance of the tumor by emptying the bladder.

6. "Puncture into the pelvis of a fetus with a blunt hook." Dr. King could not advise the use of the blunt hook on a living child. Of late years, the forceps or the fillet are recommended in cases in which the legs are extended in breech-presentations.

7. "Four drachms of fluid extract of cascara sagrada given instead of the fluid extract of ergot." This case demonstrates the uncertainty of cascara sagrada. He could not see why immediate delivery was necessary in this case. The blunt hook in the mouth is certainly a novel proceeding. He would not himself recommend the routine employment of hot-water intrauterine injections. In looking over the catalogue of the surgeon-general's library the other day, he was surprised to see the numbers of

cases of recovery after all sorts of difficult labors and obstetric operations without the use of antiseptics or even hot water. He does not believe that the use of hot water hastened the convalescence in Dr. Busey's case.

8. "A drachm of Monsel's solution given instead of an equal quantity of ergot." This, though a unique case, needs but little discussion. It shows, however, great skill in treatment by the attendant.

DR. W. W. JOHNSTON remarked that in the first case Dr. Busey alluded to having ruptured the membranes, which opens up the question of the propriety of such a procedure in any case. In his opinion the unruptured sac must play an important part in labor by dilating the vagina, and it is a question in his mind as to the advisability of ever rupturing it, at least until it protrudes from the vulva. It must exert a constant gentle pressure upon the vaginal walls, perhaps also causing secretion of lubricating mucus, and give time for the uterus to dilate. As they do rupture late not infrequently, we may assume that it is normal that they should not rupture as early as they generally do. Why they do rupture early he does not know, except that they must be abnormally fragile, and it has occurred to him that if the custom of rupturing the sac was discontinued for one or two centuries, we might find more women with normally tough fetal membranes.

DR. MCARDLE saw a case last December like Dr. Busey's first case. He was sure the sac had ruptured before he got to his case, because there had been a gush of water; he soon, however, found a second sac which he wanted very much to tear open, but not feeling sure of what it was he let it alone, and the child was born with a caul. He agrees with Dr. Johnston that the unruptured bag of waters plays an important part throughout labor, and should be let alone as long as possible. He does not agree with Dr. King, that there is more danger of the funis prolapsing when the sac is ruptured at the height of a pain than at any other time.

DR. H. D. FRY said the cases reported by the reader were of great advantage to us, the younger members of the profession.

The formation of the caul in the first case probably resulted as has been described.

Schroeder states that a sudden gush of amniotic fluid often occurs during a pain without there being any rupture of the bag of waters. This is not due to hydrorrhea, but to rupture of the sac, probably within the internal os, in which case the bag gradually becomes flaccid. Again, he states that morbid adhesions may exist between the fetal membranes and the uterine mucosa, preventing retraction of the lower uterine segment over the ovum, until the membranes rupture. In such cases, the decidua and chorion rupture within the internal os, and they, with the os, retract over the presenting part. The continuity of the bag is preserved by the amnion alone.

Having eliminated hydrocephalus from consideration of the case in question, the only other condition that might mislead us under the circumstances is the *caput succedaneum*, and this would not be likely to occur so early in the labor.

Other conditions that might throw doubt upon the question whether or no the membranes had ruptured are the existence of hydrorrhea gravidarum and of the non-formation of the bag of

waters, the fetal membranes being tightly drawn over the presenting part—usually in such cases the head. He had recently met with an example of the former. The latter may result from the morbid adhesions spoken of above, between the uterine mucus membranes and the fetal coverings, or the presenting head may so completely fill the pelvic canal as not to permit the formation of the "fore waters."

He believes that the bag of waters has performed its function when dilatation of the os is completed. Certain writers in France, and Dr. Henry T. Byford in this country, have attempted to prove that they facilitate dilatation of the vulvar opening. Before rupture of the membranes, the uterine contractions exert their force upon the ovum as a whole, and do not tend to force the fetus itself out of the womb. It must be considered that there is some danger of dragging upon the placenta, and causing premature separation and hemorrhage. That Nature intends the bag should rupture after dilatation of the os is, he thinks, clear to any one who will read the lucid description of Schroeder concerning the two expellent forces, viz.: "the internal uterine pressure" and the "form restitution power."

Dr. Fry believes that it is no trifling matter to decide to rupture the membranes before dilatation is effected, and that the indications and contraindications must be considered before acting. Certain alternatives for hastening dilatation will often succeed more satisfactorily. He agrees with Dr. King in regard to the value of abdominal palpation. He practises this, but usually after and to confirm a vaginal examination. Modest women expect and accept a vaginal examination, but often object to the practice of abdominal palpation, especially when it is attempted before the former. It is possible by vaginal examination to make out the presenting part without introducing the finger within the os. This is done by passing the finger over the thinned lower segment of the uterus anterior to the cervix. Thus we can often recognize in head presentations the sagittal suture, and ascertain in which diameter it passes.

Cases II., III., and V. illustrate the necessity of close investigation in all obscure cases, and the importance of bringing to our aid every means to assist us in arriving at a diagnosis.

Case VI. demonstrates the danger of employing the blunt hook, which is an instrument Dr. Fry cannot recommend unless there is every reason to believe that the infant is dead. Bringing down one foot, the forceps, or fillet are safer and preferable expedients.

He cannot agree with Dr. King in what he says regarding the use of hot-water intrauterine injections. Employed universally after labor, they undoubtedly do harm and increase the morbidity of the puerperal state fifty per cent; but after operative interference within the uterine cavity they not only control hemorrhage but secure firm contraction of the uterus. Ahlfeldt has demonstrated that absorption from the cavity of the firmly contracted organ is much less than when such a condition does not exist.

DR. W. W. JOHNSTON remarked that it is still an open question as to whether it is normal or not for the membranes to rupture early in labor.

There are but very few labors normal beyond a certain point,

and then the perineum ruptures or something else out of the way happens. Matthews Duncan states that there is scarcely a labor without a more or less severe rupture of the perineum or tear of the vagina. Dr. J. thinks that the wedge-shaped bag of waters prevents even the small tears by gradually dilating the vagina in advance of the head, and by keeping the presenting part well lubricated.

He does not believe in the premature separation of the placenta by its being dragged away by the membranes. These last are, in his opinion, too elastic for this. He is strongly of the opinion that the pouch of waters subserves some end besides the dilatation of the cervix. In an absolutely normal labor there will be no vaginal examination, and consequently artificial rupture of the sac is unknown.

He has seen the forceps used once in breech-presentation. In this case one of the blades was inserted over the abdomen, thereby rupturing the cord, and the other over the sacrum. Of course this was not the correct position for the blades.

THE CHAIR remarked that, in a physiological labor, the woman probably would not lie in bed during the first stage, but would walk around or squat, or in some way keep the spine vertical, and he thought that in this position the weight of the fetus would rupture the membranes. In cattle, however, the bag projects a foot or more from the vulva, and not infrequently the offspring is born with the unruptured membranes about it.

DR. W. W. JOHNSTON remarked that he did not think that the membranes would rupture with the woman in a vertical position, if they were normally tough.

DR. F. C. FERNALD remarked that in Case IV. he thought that labor and vesical pains might have been differentiated by laying the hand on the uterus and noting the time of the pain. If the pain was only when the hand felt the uterus contract, the discomfort to the woman might have been set down to labor.

DR. BUSEY, in closing, remarked that he entirely coincided with Dr. King in regard to the value of abdominal palpation as a method of diagnosis of the presentation and position of the fetus. He did not, however, extend its application as far as Dr. K. He did not, for instance, believe he could have made out the presentation of the foot in the second case by that method. It had not been applied in the case, because he was not then as familiar as now with the method; nor had it been at that time studied with the same precision.

In the second case, the other foot was brought down to expedite delivery, because he believed the condition of the patient did not permit unnecessary delay.

He concurred, also, in the opinion that the blunt hook was a dangerous instrument and that the fillet was preferable. He did not believe the application of the forceps to the breech was free from danger. He had in a number of cases employed the blunt hook with entire satisfaction.

He did not recommend hot-water intrauterine injections as a routine practice, but in such cases as he had referred to in the paper he would urge their employment.

It was not his usual practice to forcibly rupture the membranes. When necessary or expedient, the rupture should be made at the most dependent part and at the time of greatest tension of the

protruding bag. Under such conditions less force was required, and there was less danger of prolapse of the cord.

In many labors the membranes ruptured spontaneously too early, due, probably, to their thinness or fragility. The persistence of the sac is the expression of the relation of the force of uterine contractions to the tensile strength of the membranes. If the latter is in excess time is wasted, force is consumed, and exhaustion follows. He does not believe the bag of waters of any use beyond that of dilating the os and cervix; hence, while he would not practise forcible rupture in cases of ordinary persistence, he would never permit the bag to protrude beyond the surface. The cases of premature spontaneous rupture, known generally as "dry labors," are tedious and dangerous to both mother and child.

It is not only true, as stated by Dr. Fry, in cases where the walls of the lower segment of the womb are thinned, that the presentation may be ascertained without the introduction of the examining finger into the cervix, but the position may also be recognized through the thinned walls.

It is possible that the method suggested by Dr. Fernald might have been successful in Case IV. It had not, however, occurred to him.

The most interesting case of the series was that of cystocolpocele. Prolapse of the bladder was an uncommon and a very embarrassing complication of labor. To mistake it for a hydrocephalic head, an ovarian cyst, or a persistent sac is inexcusable, for the employment of a catheter with its point carefully introduced and turned towards the prolapsed part ought certainly to differentiate it from either of those conditions for which it has been mistaken with disastrous results. There are, however, other displacements of pelvic viscera for which it might be very readily mistaken. He had not discussed in the paper the differential diagnosis, but had simply presented the symptoms of a cystocolpocele, but would now briefly refer to several other occasional complications which might be mistaken for prolapse of the bladder. A cystocele could be ascertained by the employment of the catheter, a rectocele by the introduction of the finger in the rectum; but inversion of the anterior wall of the vagina might occur unassociated with a displacement of the walls of the bladder, and an inversion of the posterior wall might exist without any displacement of the rectum. In such cases, there would be an edematous, tumorous mass of indefinite size with limited mobility and irreducible. From a cystocele it can be differentiated by the evacuation of the bladder; and from a rectocele by the absence of a pouch above the sphincter, discovered by the introduction of the finger into, and the presence of feces in the dislocated rectum. Such inversion of the vaginal walls simulating either a cystocele or a rectocele may interfere with the process of labor. In such cases, it may be proper to reduce the tumor by puncture or scarification. The essential point is to determine the nature of the mass before interference.

Cysts of the vagina vary in size from that of a pea to that of a child's head. They most frequently occur singly; may be interstitial, submucous, peri-vaginal, or lymphatic, and may be located on the anterior, posterior, or lateral wall, most frequently on that part between the middle and the orifice. They arise in the form of retention cysts, and may be caused by edema or transudation

of blood into the submucous tissue, or by the dilatation of lymphatic vessels. Mucous cysts are usually the result of inflammation of the mucous membrane, and the submucous and interstitial varieties are most frequently the result of compression and contusion of the vaginal walls during labor.

The diagnosis of such cysts is not difficult. In color they differ from that of the vaginal wall. They are tense, irreducible, and when large, fluctuating. When grasped and moved their connection with the wall is evident. If located on the posterior wall, a rectocele may be excluded by the introduction of a finger into the rectum; and if on the anterior wall, a cystocele may be excluded by the employment of a catheter. If labor should be complicated with such a cyst of sufficient size to obstruct delivery, puncture or incision must be practised. Before, however, either are resorted to, the nature of the tumorous mass must be definitely determined.

Ovariocele may be either primary or secondary. When the inversion of the posterior vaginal wall is produced by the pressure and weight of a displaced and enlarged ovary, the diagnosis can only be made by exclusion and a careful consideration of all the symptoms of ovarian tumors. When the ovariocele is secondary, resulting from the displacement of an ovary into the sac of an inverted posterior wall, it may be recognized by the size, form, surface, and reducibility of the mass within the sac of the prolapsed wall. An ovariocele may be reduced. When complicating pregnancy, narcosis will be necessary. If not reducible, it might be diminished by puncture of the fluctuating portion. If obstructing labor, Cesarean section may be necessary.

Vaginal enterocoele may be single or double. Inversion of either the anterior or posterior wall or of both may occur. Such tumors are usually easily recognized by their softness, elasticity, reducibility, and the impulse on coughing.

A hydro- or pyocolpocoele will be located behind the cervix, and must be differentiated from the cervix. In either case, the prolapsed vaginal wall will be edematous and reddened. The sac will be tense and fluctuating, but not tympanitic; and, perhaps, reducible by pressing the fluid contents through its communication with the peritoneal cavity. A hydrocolpocoele will be present in connection with ascites, and a pyocolpocoele with diffuse peritonitis. The contents of either may be evacuated by puncture.

A metrocolpocoele ought to be differentiated by the usual signs of a retroverted pregnant womb. It is the result of the continuously increasing pressure of the enlarging pregnant retroverted uterus and final rupture of the posterior vaginal wall.

Cystic colpo-hyperplasia, which consists of a number of conglomerate vesicles studding portions of the vaginal wall, has been observed during gestation, but the vesicles are not of sufficient size to offer any obstruction to delivery.

Dr. F. concluded with the statement that he presented this brief reference to these possible complications of labor to complete the differential diagnosis of cystocolpocoele.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Stated Meeting, April 14th, 1887.

The President, DR. GUSTAV ZINKE, M.D., in the Chair.

DR. GILES S. MITCHELL read a paper on

"CHRONIC METRITIS" AND ITS TREATMENT.

Of all the diseases to which women are prone, there is none more common or more generally misunderstood than chronic inflammation of the womb—an affection not dangerous to life, but often resulting in permanent invalidism.

The writings of Aetius, Paulus Aegineta, and Alexander Tralianus afford indubitable proof that the ancients were familiar with the etiology and seat of uterine inflammations.

Prominent among the numerous synonyms for the disease may be mentioned the engorgement of Lisfranc; Irritable uterus of Hodge; Uterine infarct of Kiwisch; Hysteritis of Duparcque; Congestive hypertrophy of Simpson and Emmet; Diffuse uterine connective-tissue hyperplasia of Klob; Interstitial metritis of De Sinéty; Uterine sclerosis of Skene, and Areolar hyperplasia of Thomas.

Probably the most satisfactory definition that has yet been given is Schroeder's, *i.e.*, Hyperplasia of the connective tissue of the uterus combined with increased insensibility.

Pathology.—With unimportant modifications, the views of Scanzoni, published in 1863, concerning the pathology of metritis chronica, are the same as those entertained by the leading pathologists to-day. He divides it into two stages. In the first stage, that of edematous engorgement, the uterine tissue is infiltrated with blood and blood elements. It is increased in size, redder than normal, and changed in form. It feels soft and boggy and is sensitive to pressure. After remaining in this condition for an indefinite time, it passes into the stage of induration. In this stage, new connective tissue replaces the specific tissue elements destroyed by the inflammatory process. In the beginning of this stage, it is not rare to find muscular elements increased in size. The hypertrophy diminishes as the connective tissue becomes fibrillated and narrows and obliterates the vessels. The uterus, although it remains enlarged, is anemic and hard. On section, the tissue is white and almost of cartilaginous consistency.

There is a striking similarity between Scanzoni's first stage and the congestive hypertrophy of Simpson and Emmet. Areolar hyperplasia of Thomas is not different from the second stage de-

scribed by Scanzoni. Klob states that diffuse growth of connective tissue constitutes the so-called induration hitherto considered as a result of parenchymatous inflammation of the uterus, and that it arises from over-excitation of the vaso-motor and nutritive nerves—a formative irritation, as it were. Klebs says in but few instances can we demonstrate clinically and anatomically the inflammatory origin of chronic uterine infarct.

According to the investigation of Dr. Finn,¹ “the regular distribution of the muscular fibres and bundles is unchanged in chronic metritis, fatty degeneration not being essential; but the fibres always become elongated, and in the latter stages of the affection the connective tissue is relatively diminished, but absolutely increased, so that the increase in the volume of the uterus is due to hyperplasia of the muscular fibres, the connective tissue playing a subordinate part. De Sinéty, however, found no change in the muscular tissue, but dilatation of the lymph spaces and hyperplasia of the perivascular connective tissue, and invariably disease of the mucous membrane, which consisted partly in proliferation of the glands and partly in the formation of embryonic connective tissue or of new vessels.”

In 650 autopsies made by Winckel, he found isolated chronic metritis in nearly four per cent. It was rarely associated with perimetritis. The uterine walls were from two to three centimetres (.8 to 1.2 inches) thick. Phlebectasie of the broad ligaments was of occasional, and co-existing adenoma of the uterine mucous membrane of frequent occurrence. Scanzoni's views concerning the pathology of metritis chronica are indorsed by Birch-Hirschfeld, Fritsch, Mayrhofer, Schroeder, De Sinéty, and A. Martin.

Etiology.—No organ in the body is so liable to undergo change in size within strict physiological limits as the womb. The virgin uterus is practically 3 inches long, 2 inches wide, and 1 inch thick. According to the calculations of Levret, its superficies may be taken at 16 inches, but at the end of gestation its length is 12 to 14 inches, its breadth 9 to 10 inches, and from front to back 8 to 9 inches, its superficies 339 inches, and its cavity, which before impregnation was equivalent to about $\frac{1}{16}$ or *quam proxime* $\frac{1}{4}$ of a cubic inch, will now contain 408, so that its capacity is increased 519 times. A few weeks after delivery, if involution is not impeded, the uterus is again the small insignificant organ it was prior to fecundation. So truly wonderful is this transformation that Schwammerdam, in his enthusiasm, christened it the *miraculum nature*. Should anything supervene to check this retrograde metamorphosis, we have as a consequence subinvolution, the most frequent cause of the affection under discussion. What, then, is essential in order that involution may proceed normally? There are two things, diminished blood supply and

¹ Winckel's “Diseases of Women.”

rapid absorption. An interference with either of these conditions will predispose to subinvolution. If the general health be lowered from constitutional weakness, a predisposition to tuberculosis or scrofula, nervous depression, frequent parturition, etc., the tone of the muscular system is lowered, and in consequence the regular rhythmical uterine contractions are too feeble or irregular to inhibit and effectually lessen the blood supply to the womb. The above-mentioned may be regarded as the most important predisposing causes of chronic inflammation of the uterus.

Conspicuous among the exciting causes are retention of portion of placenta, membranes or clot, cervical laceration or contusions, perimetritis and parametritis following labor or abortion, menstrual subinvolution, dysmenorrhea from stenosis, flexion, retained menstrual blood, excessive venery, gonorrheal endometritis, chronic ovaritis, neoplasms, malaria, etc.

Scanzoni, Emmet, Goodell, and others regard conjugal onanism as an important etiological factor in the production of metritis chronica. Dr. Ely Van de Warker, in an able paper published in the *AMERICAN JOURNAL OF OBSTETRICS* for August, 1884, says the importance of onanism as an etiological factor has been greatly overestimated. He predicates his opinion upon a gynecological study of the Oneida community.

This peculiar sect practised onanism to an unlimited degree for many years. In summing up the results of his investigations, Van de Warker says: "I can discover nothing but negative evidence relating to the effect of male continence upon the health of the community."

Fritsch states: "I have examined puellæ publicæ for years, but have not gained the impression that metritis chronica is of frequent occurrence."

There is reason to believe that the importance of onanism and excessive venery as etiological factors has been exaggerated. A too early getting up after confinement, the uterus being still bulky and the ligaments relaxed, induces hyperemia by favoring descent or prolapsus of the womb. A fibro-rayoma, organic, cardiac, hepatic, or pulmonary disease, by causing venous stasis, induces passive hyperemia and favors subinvolution.

Thomas says: "The woman who has never been pregnant is much less liable to areolar hyperplasia than she whose uterus has undergone the tissue changes of utero-gestation; nulliparity securing to a very great extent an immunity from the disease, and multiparity constituting a most important predisposing cause. Still the uterus may become considerably enlarged independently of pregnancy, as in cases of stenosis or flexion of the uterus, the muscular tissue becoming hypertrophied from the violent efforts made to expel the contents. Moreover, it must be remembered that the uterus is constantly undergoing changes

from puberty until the menopause, its vascularity and functional activity being increased by emotional influences, as well as by the ever-recurring menstrual congestion. Any alteration in these conditions may give rise to hypertrophy or hyperplasia."

Dr. Emmet says: "The simplest form of congestive hypertrophy may be illustrated by the condition sometimes found in a woman who has never been impregnated, where it exists as if it were a protest on the part of nature, the true function of the uterus never having been fully called into play. Few unmarried women reach the age of thirty-five without suffering more or less from this condition, whenever the function of nutrition becomes impaired from the nervous disturbance; and this is likely to be the earliest manifestation. We meet with congestive hypertrophy accompanying sterility, which is also a protest of nature." The distinguished author and teacher implies that pregnancy is in a measure prophylactic.

Symptomatology.—Sooner or later, symptoms supervene characteristic of the tissue changes above described. Their order in point of chronicity is not always easy to note, however, since the disease often develops insidiously, and is masked by important complications. If the inflammatory process involves the puerperal uterus, it usually supervenes a few days subsequent to patient's getting up. Distress may not be felt, however, until time for menstrual reappearance arrives. Backache, pain in limbs, leucorrhea, sense of weight about the pelvis, increased menstrual flow, abdominal pains, dysmenorrhea, etc. Amenorrhea is not uncommon during the stage of uterine sclerosis.

Priestly, Fasbender, Fehling, and many other clinicians have called attention to an intermenstrual pain as an almost uniformly constant symptom of metritis chronica. Vague intrapelvic pains are complained of fourteen or fifteen days before and after a period, and the woman is sure she is about to be unwell. Sometimes there is an escape of bloody mucus.

Fehling ascribes this intermenstrual pain to swelling of the mucous membrane, preparatory to the next menstrual period. Hysteria, headache, facial neuralgia, coccygodynia, diseases of the skin, and many other diseases have been attributed to chronic metritis. Intercostal neuralgia and mastodynia, with swelling of the mammary glands and darkening of the areola, are of common occurrence. Physical examination during the first stage reveals the uterus regularly enlarged, soft, and sensitive to pressure. It may be flexed, prolapsed, or elevated. In a large proportion of cases, a cervical laceration can be differentiated. Introduction of the sound elicits increased depth of cavity. According to Boivin and Dujès, the uterine enlargement is equal to about the second month of utero-gestation. During the second stage the organ is harder, not sensitive, and relatively smaller.

Prognosis.—The affection is not dangerous to life, but where the

whole organ is involved, an absolute cure is seldom effected. When the cervix alone is involved, the prognosis is much more favorable. The prognosis is also modified or rendered more serious by the supervention of complications, such as displacements, cystitis, cellulitis, endometritis, menstrual disorders, hysteria, dyspepsia, ovarian disorders, etc.

Scanzoni says chronic metritis is never limited to a portion of the womb and is incurable.

On the contrary, Robert Barnes affirms there can be no doubt in the minds of those who have had large opportunities of observing puerperal diseases, that acute and subacute metritis is often followed by virtual if not complete recovery.

Prophylaxis.—Pregnancy, although a physiological process, induces important functional disturbances. Reflex derangements of the nervous system and digestive tube are of common occurrence. Additional tasks are imposed upon lungs, kidneys, and other viscera. The blood is increased in quantity but vitiated in quality. Attention, then, to the hygiene of pregnancy constitutes an important part of prophylaxis. The timely application of the forceps and the judicious exhibition of chloroform in tedious labors. Not permitting a patient to exhaust her nerve force and muscular energy in fruitless efforts to expel her offspring. The early recognition and treatment of uterine displacements, cervical and perineal lacerations promotes involution.

Treatment.—Treatment that results beneficially must be both constitutional and local. It is essential to improve the general health. Strict attention to diet, fresh air, moderate exercise, and the exhibition of appropriate remedies is of primary importance. The tonics of greatest utility are arsenic, quinine, strychnine, and the various ferruginous preparations. Prominent among the remedial agents that are presumed to have more or less specific action upon the uterine cellular elements are ergot, iodide of potassium, chloride of ammonium, hydrastis canadensis, and viburnum prunifolium. Squibb's fl. ext. of ergot, one of the most reliable preparations in the market, can be exhibited either by deep-seated injections or per os. Dr. Edward Jenks, of Chicago, regards the fl. ext. of viburnum prunifolium as a remedy of great value in the treatment of metritis chronica. Supporting the uterus with a properly adjusted pessary is often of great benefit. Irrigation of vagina with hot water at a temperature of 112°, with the patient in the dorsal decubitus, is one the most valuable agents we possess, not only in the treatment of the malady under consideration, but for any inflammatory trouble of the pelvic viscera. It improves pelvic and uterine circulation, causes uterine contraction, and favors absorption. Cold-water injections likewise are beneficial, but few patients can stand the shock. The irrigation accomplishes the greatest good when repeated two or three times in the twenty-four hours. Not less than a gallon of water should be employed at a time.

Fritsch and others have tried continuous vaginal irrigation, and are satisfied the best results are obtained from periodical injections.

An excellent stimulus to the circulation is a cold hip bath. It may be indulged in every morning. Medicinal spring waters often have marked beneficial effect. Kreuznach, Kissingen, Wiesbaden, Baden-Baden, Marienbad, and Franzensbad are among the most celebrated European spas that are recommended for metritis chronica. In chemical composition, the waters of Spring Lake Well and Fruit Post Well, located in Ottawa County, Michigan, resemble very nearly that of the Edisenquelle of Kreuznach. Weir Mitchell's cure is effectual in many cases. It consists in removal of patient from her old surroundings, and the withdrawal of narcotics; the employment of massage, electricity, milk diet, and confinement to bed for six or eight weeks.

Pregnancy sometimes effects a cure. Curetting the cavity and the application of powerful caustics, and even the actual cautery to the endometrium in exceptional instances has been of great value. Local depletion has few advocates among American gynecologists, although a favorite mode of treatment with continental specialists. As a dernier ressort in desperate cases, oöphorectomy has recently been recommended. Where the disease is limited to the cervix, amputation is practised by German and French gynecologists. The method employed by Augustus Martin, Esmarch, and Galabin is as follows:

"The cervix being drawn down, two hare-lip pins are passed through it at right angles to each other. The cervix is then constricted by an elastic ligature, and one flap is dissected up upon the outer surface and another upon the inner surface of each lip; the portion of the lip between them is then excised and the upper united to the lower lip with catgut sutures." The above operation is inferior to trachelorrhaphy.

Since the treatment of chronic metritis is not full of promise, any addition to its therapy is of value. The plan of treatment I am about to advocate is new only in part, and is not recommended as a specific. The majority of cases can be improved by its employment and some cured. Sims, many years since, eulogized glycerin as a topical application and curative agent in the treatment of most uterine ailments. His method consisted in tamponing the vagina with cotton saturated with glycerin—a method still deservedly popular. My plan is simply an addition. I not only tampon the vagina, but the uterine cavity as well. All are familiar with the antiseptic properties of pure glycerin. It also has strong affinity for water, and when in contact with a mucous surface induces a profuse watery discharge. It drains the capillaries, but does not disturb the albuminoid constituents of the blood. It also soothes and promotes the healing of inflamed and wounded surfaces. The gentle pressure exerted by the cot-

ton stimulates uterine contraction, and in this way promotes the absorption of inflammatory products. The size of the tents or pledgets of cotton employed, the frequency of their introduction, depends largely upon each individual case. I never find it necessary to treat my cases oftener than twice a week, and permit the cotton to remain in the cavity from fifteen to twenty hours.

In the majority of cases, little or no difficulty is experienced in the introduction of the cotton, owing to the patulous condition of the cervical canal. Occasionally, however, the endometrium is so exquisitely sensitive that the application of a four-per-cent solution of cocaine is necessary before the treatment can be accomplished. It seldom happens that a patient complains of pain from the tampon. Patients can be treated at office, but should be instructed to return home at once, and remain quiet until after removal of the cotton. I have been treating metritis chronica in this manner since nearly two years, with very gratifying results. Be it understood, however, I do not confine myself in its treatment simply to tamponing the vagina and uterus with cotton saturated with glycerin. In addition, every means that tends to improve the nutrition and general health of the patient is employed.

I regard tamponing the uterine cavity simply an adjunct to other well-recognized methods.

DR. PALMER spoke of the three stages of the disease. In any given case, we must endeavor to determine which of the three stages—hyperemia, hyperplasia, or cirrhosis—predominates. Most cases supervene upon a subinvolution, following delivery at term or an abortion, and it is impossible to determine when this subinvolution emerges into a chronic metritis. Subinvolution really belongs to the first stage of the disease. The characteristic feature now is increased vascular supply, and to this all the treatment, both general and local, should be directed.

The second stage is a resultant on the first. It is doubtful whether any medicinal remedies can modify or remove this proliferation of connective tissue, though the bichloride of mercury, the muriate of ammonia, iodide of potassium, all are recommended and used. Anything, however, which diminishes the vascular fulness may check this hyperplasia. The third stage requires treatment of an opposite kind to that which is appropriate for the first. Now iron and electricity, especially galvanism intrauterine, are applicable.

As to the suggestion of treatment made by the essayist, he thought it would be found useful for a few cases in the first stage or the beginning of the second stage. The uterus ought, however, to be free from sensitiveness, the os and canal patulous. As a topical application, the boro-glyceride was superior to ordinary glycerin, because more anhydrous and antiseptic. If the uterus was sensitive, or, if the uterine canal needed dilatation, the method would probably do more harm than good.

DR. A. J. MILES agreed with the first speaker in regard to the treatment of these cases, which will depend on the stage of the

disease. In some instances, the cure may be hastened in the first stage by the application of leeches or puncturing the cervix with Buttle's spear. If seen early enough, the cases should be thus treated before the application of glycerin. In the second stage, especially in the latter part of it, iodine may be combined with glycerin, which has stimulating as well as absorbing properties. In the third stage, electricity is undoubtedly the most efficient agent to restore the lost activity of the womb. The success following treatment will depend on the stage in which the disease is first seen, as well as upon the age of the individual. In the age approaching the menopause, treatment will be of little avail for the third stage of the disease, but in young persons the prognosis as regards cure is better.

The speaker had also tried the effect of ergotin in these cases. He applied it to the cervical cavity with good results, and also injected it into the parenchyma of the womb. This latter method, however, he soon again abandoned on account of the irritation and inflammation which followed it.

DR. J. G. HYNDMAN was of the opinion that the general practitioner has the advantage over the specialist in the treatment of these cases. The latter is more apt to see these cases in the second or third stage when the treatment recommended by the essayist is not so likely to be followed by a good result, while the former sees the affection in the first stage, at a time when treatment will accomplish most good. Subinvolution is the principal cause of chronic metritis, hence the general practitioner who will see the cases shortly after delivery, and institute the proper treatment, will get the best results. The treatment is so simple, and the hygroscopic properties of glycerin so well known, that there are no difficulties in the way of getting good results.

DR. JULIA CARPENTER remarked that glycerin was very effective in the treatment of chronic metritis in the first stage. She also agreed with the essayist as to the properties of hot-water injections in facilitating involution of the uterus, but she did not use injections of any kind in normal cases of labor, hence did not resort to these injections at so early a time as was the habit of the essayist. It was her custom, however, to see her patient at the expiration of the month, and if at that time there was insufficient involution of the uterus, she instituted the hot-water treatment.

Another useful remedy for some features of this affection was "Kennedy's Concentrated Extract of *Pinus Canadensis*," which she had used with success in many instances. Her attention was directed to this agent by the recommendatory statement of Marion Sims.

DR. W. H. WENNING said that the pathology of chronic metritis was necessarily a fruitful theme for discussion, on account of the multiplicity of chronic conditions collected under this one term. The term was in so far misleading as a "metritis" or *inflammation* of the womb is in the rarest instances the appropriate expression for the disease. As a sequel to acute metritis, the so-called chronic form occurs very rarely, although an acute metritis may attack a womb already the subject of the chronic form. Subinvolution of the womb, areolar hyperplasia, chronic infarction, etc., are all embraced under the collective term chronic metritis. Klob does not place metritis chronica under the same category as the acute, but ranges it under the head of neoplasms—new-formations—of the womb.

The symptoms are vague and manifold, as described by the essayist, corresponding to the different conditions of the womb. The speaker would, however, call attention to one point which may present some difficulty in diagnosis, namely, the differential diagnosis between chronic metritis and early pregnancy, and more particularly the recognition of pregnancy occurring in a sub-involuted uterus. This fact is usually not mentioned by authors. A short time ago, the speaker was reminded of the difficulties that may be thus presented for diagnosis: "A young woman, a mother of two living children, presented herself for treatment for what she supposed to be a tumor of the womb. She stated that she had been told by several regular physicians that she had a tumor and therefore came to this city to have it removed if possible. On further interrogation she stated that she had occasionally profuse hemorrhages, *the last one four or five weeks ago*, considerable pain in the region of the womb, and an offensive discharge. In addition to this, she had a very cachectic and suffering appearance. Anticipating my suspicions of malignant disease, she stated that she had just consulted a notorious cancer doctor who had detected the growth and agreed to 'draw it out.' Before expressing any opinion, I requested an examination, during which I found to my surprise no evidence of any malignant disease or tumor of any kind; but the womb was considerably enlarged and showed all the symptoms of subinvolution. In addition, the complication of pregnancy was suspected, but the fact that the patient had been constantly under local treatment and a hemorrhage occurred not later than five weeks ago excluded this supposition. Her mind, however, was so fixed upon the idea that a tumor was present that I asked my friend, Dr. Jones, to see her, without, however, giving him any history of the case. He confirmed my diagnosis and, not suspecting pregnancy, introduced a large sound, as I had also cautiously done at the first examination. A few days afterwards the patient was seized with a violent hemorrhage, and an examination of the clots showed the remains of deciduous membranes, although the ovum itself could not be found. The patient then made a rapid recovery and the symptoms of pain and distress in the region of the womb, of which she had mostly complained, disappeared. In this instance, undoubtedly, the chronic metritis was complicated by a pregnancy and the increasing size of the womb was mistaken by herself and her attending physicians for a tumor."

As regards the essayist's mode of treatment, the speaker feared that few women would tolerate the presence of a uterine tampon, if allowed to go home with it. He had used intrauterine pencils in his office practice in cases of chronic endometritis, but found that they often caused pain. Unless the cervix be very patulous and the passage of the sound causes no pain, especially when the inner os is reached, foreign bodies are not well tolerated by the uterine cavity. As a vaginal tampon the speaker lately used antiseptic wool altogether, as it is more elastic than the cotton and hence forms a better support to the womb.

DR. GUSTAV ZINKE agreed with all the other speakers, that success in treatment depends on the ability and facility in recognizing the different stages of metritis. The etiology is clear and undisputed. One point, however, had not been brought out in the discussion of this subject, namely, on account of the increase in size and

weight of the uterus, this organ is generally also prolapsed; hence the vaginal tampon should be so constructed as to support the organ, in addition to the results derived from the absorbent properties of the glycerin with which it has been saturated. A useful modification of tamponing the vagina and of securing support of the uterus has lately been described by Reeves Jackson in the *Jour. of the Amer. Med. Ass'n*, April 23d, 1887. This is an improvement on a method first suggested and tried in 1878 by Dr. Taliaferro, of Atlanta, Ga. It consists of using prepared sheep's wool for the tampon, the absorbent qualities of which are not like those of absorbent cotton. Unlike the latter, it retains its original shape and size, owing to its greater resiliency. In order, however, to obtain the advantages of both, absorbent cotton may be placed over the sheep's-wool tampon, the whole then being introduced while the patient is in the Sims' or knee-chest position, using Sims' speculum to expose the parts. The cervix and vagina are dusted previously with subnitrate of bismuth, if the physician intends to leave the tampon in position for a few days—a procedure adopted by Dr. Reeves Jackson in order to secure rest and support to the parts. The speaker had had recourse to this method lately in several cases and admitted that the claims of the originator were fully verified. Tamponing the uterine cavity, as suggested by the essayist, will never become a popular method: its object may be obtained by safer means. This mode of practice is more likely to do harm on account of the irritation it produces. Hence it has been generally abandoned, and the speaker had never seen a case in which such a practice had been desirable or necessary. In the third stage, but little if anything at all can be done, and no agent promises to do good except, perhaps, electricity.

Dr. Zinke raised the question whether, in the event of considerable induration of the cervix (especially in an inveterate case, without laceration), it would not be justifiable to exsect a triangular piece from each side of the cervix and sew up the gaps, as is done in Emmet's operation for laceration of the cervix.

Dr. PALMER replied that this method of exsection of a portion of the cervix, when it and the uterine body were enlarged and indurated, had a German origin. He had practised it even where there is no cervical laceration, and believed it was a potent means to favor involution. The term chronic metritis is a misnomer because the whole process of diseased action was hardly inflammatory and because it was a chronic affection not ingrafted upon an acute inflammation. Acute parenchymatous metritis probably never exists as an independent affection in the non-gravid state, and is extremely rare even at the puerperium. As opposed to these views, the recent expressions of Dr. Mary Jacobi are worthy of great consideration.

Instead of uterine subinvolution hindering, it rather favored impregnation, provided, of course, there was no co-existing endometritis. The os and cervical canal are more open, the uterus lower, and its axis approaches nearer the vaginal canal, so that the chances of insemination, owing to mechanical causes, were really increased. The second stage well advanced was a hindrance to pregnancy, and in the third, sterility was almost a certainty.

Dr. GILES S. MITCHELL, in closing the discussion, said he recommended tamponing the uterine cavity with pledgets of cotton saturated with glycerin, not as a specific for metritis chronica,

but as a valuable adjunct to its therapy. Speaker said, owing to the patulous condition of the cervical canal in this class of cases, no difficulty is experienced in the introduction of the cotton. The pain inflicted ordinarily was not greater than that caused by the passage of a sound.

Speaker regarded the so-called second stage of Scanzoni or the areolar hyperplasia of Thomas as simply an inflammatory sequence, not an inflammatory process. In his judgment, to call it chronic metritis was a misnomer. The vascular supply is very greatly diminished and the normal muscular tissue is replaced in a great measure by new connective tissue. Indeed, it is a condition opposed to inflammation.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, June 24th, 1887.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. JOHN BARTLETT read the following paper, entitled:

SEVERAL ITEMS OF OBSTETRICAL INTEREST.

I. Some twenty-five years ago, as well as my memory serves me, the question began to be mooted whether quinine were an abortifacient and oxytocic or not. Prior to 1862, so far as I am aware, preparations of cinchona were given to pregnant women freely and without any suspicion that harm might result therefrom. To-day the profession is divided in opinion on this subject; some scrupulously withholding quinine from the pregnant woman, others giving it without reserve. In the course of my reading, I have chanced upon an observation of Mauriceau's which indicates that two years prior to Sydenham's notice of the bark, this obstetrician had sought an answer to the query in question. I quote: Obs. CCLXXII: "On the 28th of October, 1680, I delivered a woman who had had during a period of fifteen days three or four violent accessions of tertian ague, which obliged me, after a bleeding from the arm, to administer cinchona. By the use of this remedy the fever entirely ceased. After having continued in good health for ten or twelve days, she was happily delivered of a large healthy boy. This experience caused me to recognize a fact, which has since been confirmed by a number of similar cases, to wit, that pregnant women can take cinchona with the same benefit as other persons, without its occasioning any injury to the mother or child."

I cannot but regard it as a curious and interesting fact that a

question as to the specific action of a medicine put forth in 1680 should be *adhuc sub judice*.

II. Last year I reported to this Society a case of placenta previa in which the placental tissue extended over the entire ovum. Cases have been reported by Sirelius, Barnes, Hegar, Hicks, and Judell in which placenta have been so spread out as to occupy nearly the whole of the internal surface of the uterus.

In connection with this subject, I call your attention to the following observation of La Motte's:

Observation CCCCI.—"The twenty-second of July, 1717, Dr. Ducet sent to desire me to go to a farmer's wife, two leagues off, who had been in labor ten days and ten nights, during which time she had not the least rest." (La Motte here proceeds to describe how he delivered by turning and continues:) "I had a great deal of trouble in bringing away the placenta, which was not one-third so thick as usual, but merely membranous, of about the thickness of a child's diaphragm; it not only adhered to the bottom of the uterus, but to its whole circumference; so that a young practitioner would hardly have believed that any placenta at all was left behind."

III. In Charpentier's treatise on obstetrics, we find the following list of authors who admit that in certain cases of placenta previa it is possible that the placenta find attachment within the neck of the uterus: Sirelius, Barnes, Thudicum, Chavanne, Marchal, Thévenot, Keppler, Pajusko, Rokitansky, Sackreuter, Mettenheimer, La Chapelle, Pinard, Tarnier, Hubert, and Noël.

I desire to prefix to this list the name of André Levret. From his work, "*L'Art des Accouchemens*," I extract the following passage from his paper on Placenta Praevia published at Paris in 1751.

Page 373: "An interesting question naturally arises in this connection. Why some women having the placenta adherent in the neck proper of the uterus arrive at term, whilst others, by far the majority, under the same conditions, do not reach the normal limit of gestation?"

"This variation in effects proceeding from the same cause must depend upon some particular circumstances as a determining cause. I explain the matter in this way. According as the placenta is primarily attached higher or lower in the neck proper of the uterus, hemorrhage will occur earlier or later. Thus when that vascular mass has taken root nearer to the os tinea, the woman will be able to approach nearer to the term of gestation than if it had been implanted as high as the constriction (internal orifice) of the uterine neck. And thus the time of interruption of the pregnancy by bleeding will vary with the level of attachment of the placenta between the two extremities of the neck. It is demonstrated as well by the mechanism of pregnancy as by the daily experience of the accoucheur, that the neck

does not begin to expand to aid in augmenting the capacity of the cavity of the uterus except in the later months of gestation; and that it is by segment after segment that the cervix continues thereafter to expand from above downwards. Now, the neck cannot thus expand without sooner or later obliging the placenta, which is not susceptible of like expansion, to detach itself in part, either in some point of its circumference if it be more advanced upward on one side than the other, or at its centre if this be in exact correspondence with the upper end of the cervical canal. It follows then as a necessity that a hemorrhage shall occur at a time more or less near, or more or less distant from the natural term of pregnancy, according as the placenta shall be attached further from or nearer to the [lower orifice of the] central canal."

IV. In the text-books on midwifery, the credit of first suggesting abdominal section as a mode of treatment of the rupture of the cyst in abdominal pregnancy is generally given to Osiander and Heim. In Levret's work on obstetrics may be found the following sentences. His appreciation of the difficulty incident to the detachment of the placenta in such a proceeding is complimentary to his foresight and sagacity.

"In extrauterine pregnancy, the fetus inclosed in the Fallopian tube or ovary ordinarily bursts its envelopes before full term, and the mother perishes of hemorrhage with her infant in her abdomen. This sad accident seems to indicate abdominal section, but I doubt very much whether an operation would succeed in saving the mother even if there were present sufficient symptoms to enable one to decide, and to decide promptly, upon an operation. Because, it would be necessary, in order to hope for success, that the site of attachment of the placenta should have power, such as the womb has, to contract very powerfully and quickly; and that is an impossibility."

V. Some writer has said that, after inventing an instrument, the first thing that one meets is an objection. It is objected to the Tarnier direct-traction forceps that the screw by which the handles are approximated so as to take hold of the head may exercise a dangerous compression. My object in this communication is to show that such compression need not be made, and that the screw does not therefore constitute an objection to the instrument.

I beg leave here to quote from Dr. Barnes: He says: "Let us . . . study the power of the forceps . . . How does it take hold? You may at first sight suppose that this is accomplished by grasping the handles. . . . The hold, especially in short-handled forceps, cannot be due to the handles. It is really due to the curvature of the blades, which fit more or less accurately upon the globular head, and the compression of the bows of the blades against the soft parts of the mother, supported by the bony ring of the pelvis. . . . In many cases, this outward pressure upon the bows

of the blades is enough to serve for traction. It is not necessary to tie the handles of the forceps. You may even do without handles altogether."

For a few years past I have used the direct-traction principle in almost all cases of forceps delivery. And I have found that my hold upon the common handles becomes more and more slight as experience enlarges. So that in an ordinary case of delivery, the fingers of the left hand rest upon the handles rather to ascertain whether compression be needed than to press the handles together.

Recently I have witnessed two cases of delivery as an assistant to Dr. J. H. Hooper, who uses forceps provided with direct-traction handles. I was surprised to find that he frequently let go of the ordinary handles entirely and while he pulled upon the traction handle with one hand, he used the other to determine the progress of the head, or to sustain the perineum. Upon inquiry I learned of Dr. Hooper that he did not ordinarily clasp the handles; only when powerful traction was applied did he deem it necessary to do so.

I think it may be said that such compression as may be needed may be applied to the ordinary handles of a direct tractor by means of a screw or otherwise, without fear of injury to the child.

VI. The vernix caseosa, an element of error in the diagnosis of the character of puerperal hemorrhage.

Several months since, I was called to a woman pregnant with her eighth child at full term. Six hours prior to this visit, without exciting cause, there had been so great a flowing as to demand the use of the tampon. The os uteri was then closed; there had been no pains until the last half an hour.

I found the pains active, and hemorrhage free, and increased during uterine contractions. The os uteri was two centimetres in diameter and softened; through it could be recognized the globular form of the head. Between the presenting part and the finger could be plainly felt a thick plate of tissue firmer than a clot, and of the consistence of a placenta. Over its surface could be traced depressed sulci, dividing the mass into lobuli.

No doubt was entertained as to the nature of the case. I had never met with an instance in which the diagnosis of placenta previa was so speedy and so positive.

Assistance was immediately sent for. I was disturbed in the hurried preparation for such interference as more thorough examination might suggest, by the cry of the patient that a great quantity of blood had passed away. The membranes had ruptured, the bleeding had ceased, the "placenta" had disappeared, and the head was passing the perineum.

After the birth of the child, I looked about the site of the *res gestæ* for an explanation of the deceptive feel, so simulating that

of the placenta. I found that the entire vertex had been covered by a disc of vernix caseosa, one-third of an inch in thickness, of the appearance and consistence of leaf fat. In the presence of Dr. Clark, I placed side by side the maternal surface of the placenta and the disc of the vernix caseosa; the feel of the two was very similar. Dr. Clark had never encountered such an instance of superabundant vernix. The upper parts of the arms of the child were so bedaubed with the sebaceous secretion as to remind one of the appearance of the spokes of a wheel on a muddy road. The hemorrhage came from a surface of detached placenta situated about an inch from the os uteri.

DR. E. W. SAWYER.—The great objection that Levret raised to laparotomy was the management of the placenta. He thought the hemorrhage would necessarily be fatal, because there is no provision made by nature for the contraction and closure of the large vessels. Thomas has enlightened the world greatly on that point, showing how the placenta should be managed. Dr. Janvrin, of New York, speaks of a case of extrauterine pregnancy, with the head presenting so low that he was tempted to draw his bistoury through the tumor and saved the woman (I forget the fate of the child). He drew the umbilical cord down through this surgical opening and was strongly tempted to deliver the placenta, but remembered the teachings of Thomas and left it, and that is the secret of success in these cases—leaving the placenta alone; Nature will in time cause a safe separation in the majority of cases. The statistics of Thomas are interesting on that point. Dr. Knox (I am sorry he is not here) narrated to Dr. Earle and myself, during the session of the Medical Association here, a very interesting case, in which he had delivered a woman of one child and after the delivery found another child in her abdomen, but not in communication with any natural passage of the woman. It was outside, in an adventitious sac. The distance between the child's head and his finger did not seem to exceed the thickness of a piece of paper. I said at once, "why did you not take your bistoury and cut through and deliver it?" He said he did not think it was feasible, and left the house without delivering the woman. But he promised to let us know the result.

I had a case of extrauterine pregnancy, which was the "celebrated case" at Boulder, Col., in which I operated. The large vessels of the placenta had been left, and the whole mass was attached and in a great chamber containing much pus. The fetus was in a condition of excellent preservation, but its fat had been changed so that in bending the elbow it cracked a little. The result of the operation was death within twenty-four hours. It was the first case of the kind that had occurred in that part of the country; the woman was well known and had gone three and a half years after her attempted labor, which had occurred under the care of a physician there. She had carried her tumor for a long time, but it afterwards began to grow smaller and she was able to run a hotel, attend dances, and lead an active life generally. Finally there was a little hectic and some chills, and a physician was called. He plunged a trocar into her abdomen and sent specimens of pus to Denver. I was invited to see the case and if any interference was necessary to make it. Boulder was thirty miles

from Denver, up in the mountains, and I was driven there by the doctor. We operated late in the afternoon. Learning the history, I thought it was an extrauterine pregnancy; it was a straight case and easy enough to follow the steps, and I advised laparotomy, which he did as well as he could under the circumstances, but the woman died. There was such a quantity of pus, and I don't suppose we used the precautions we would now, and it is probable a good deal of it went into the peritoneal cavity.

DR. BARTLETT.—When Thomas had his first case he cut into the sac and removed the placenta. If he had had the forethought of Levret he would not have removed the placenta.

THE PRESIDENT read the following paper, entitled:

OBSERVATION IN CHIARA'S CLINIC AND THE HOSPITAL ST. MARIA
NUOVA, FLORENCE, ITALY.

With the exception of an occasional paper, an abstract of which may appear in some of our journals, we hear but little of what is being done by members of our profession in Italy. It is true that a few names of Italian writers and teachers may be seen in our works, but as a place for medical study it is rarely, if ever, suggested.

It was my good fortune to be able to remain nearly two weeks in Florence and to form the acquaintance and friendship of Dr. Dominic Chiara, Professor of Gynecology in the University, whose courtesy and kindness I shall ever have occasion to remember. It was my purpose to remain but a single day in the city, but I found it impossible to leave under three days and so made inquiry for a hospital at which I expected to make only a passing visit. I was directed to the Hospital St. Maria Nuova, where I found Prof. Chiara and Dr. Kirsch, one of his assistants, both speaking some, and the latter very excellent English. I soon found that I could take a course in operative obstetrics and see a number of the larger gynecological operations and so decided to remain.

Through the great kindness of the director, I was given one of the special rooms in the institution, with a servant at my command. This is the largest hospital in Florence, and was founded in 1288 by Folco Portinari, the father of Dante's Beatrice. It was enlarged in 1574, has a large library and can accommodate eighteen hundred sick people.

The buildings which make up this hospital are old, and are about three stories in height and built almost entirely of stone. In all probability they are old Catholic institutions, indeed some relics and pictures remain which make this supposition certain. The place is full of yards, squares and trees, passages and corridors.

The director of every department occupies rooms in the hospital, as do also his assistants. There are very few rooms set aside for students, who can obtain them by making application some time in advance. The meals of the directors, assistants, and

students are all taken in neighboring restaurants. Among the students were several from South America who spoke some English. There is in the hospital a large class of young women who are in training for nurses and midwives.

The reception rooms for the use of patients, and those where the admission to the hospital are made, are closed two or three times every day and thoroughly fumigated by burning sulphur, and throughout the entire building at very close intervals are placed basins for washing hands and arms. These are all provided with hand-brushes and soft sublimate soaps.

When the director of the clinic and his assistants go through the wards, they are dressed in dark-colored gowns, and strange as it may seem to us, wear their hats and caps, which are not removed while around the bedside of the sick.

Prof. Chiara, President of the Medical School and Director of the department of gynecology and obstetrics, was educated in Turin and then served for a time in the army. The two following years were spent in Paris and then two years in the Medical Clinic in Turin, and the same number of years in the Obstetrical Clinic. He was professor of obstetrics at Parma for five years and for ten years professor and director in the Maternity Hospital in Milan. For the last four years he has been professor of gynecology and diseases of children and director of this department in the University of Florence. He has written a work on obstetrics for midwives which has been translated into French, the edition being now exhausted. He has also written an essay on spontaneous evolution, and articles on deformities of the pelvis, Cesarean section, fibroids of the uterus, extirpation of the ovaries, and antiseptics in obstetrics.

The method of teaching in this hospital is entirely clinical and the work in the wards and operations in the amphitheatres are always spoken of as the clinic, and not the hospital.

Chiara is authority in regard to the subject of spontaneous evolution. The following is an abstract of his thesis printed in 1878:

In February, 1877, a woman was admitted to his hospital in Milan who had been in labor twenty-four hours and had been sent to him from the country in a very uncomfortable conveyance. A midwife had seen her early, ruptured the membranes and found the shoulder and cord prolapsed, and had called a surgeon to assist her who tried in vain to turn. She was now started for Chiara. When she arrived at his hospital she was in a fainting condition and died in twelve minutes after, while means were being resorted to, to resuscitate her. It was found on examination that the left arm was thoroughly protruding, and to determine exactly what nature had done toward delivering this woman, it was determined to congeal her, and make exact drawings.

After the "twenty-four post-mortem hours" she was kept in ice and salt and then divided in an antero-posterior direction by means

of the saw. A large blood clot was found around one of the legs of the fetus and an abundant extravasation of blood (1200 grams) in the periuterine connective tissue. These may have been produced either by the doctor in trying to turn, or in her journey to the hospital over the rough roads.

What should have been done? If the shoulder was not impacted too much, it was the duty of the surgeon who first saw her to try to turn. If the shoulder had been wedged into the pelvis when Chiara first saw it and the child had been alive, he would have let it alone, trusting to nature, but helping along as best he could. If it had been dead, he would have performed embryotomy and delivered at once.

If he had tried to save the child he would have watched the mother carefully and if her life was endangered he would have sacrificed the child.

He believes that some cases of turning by those not particularly skilled are more dangerous to the mother than the crotchet; a very dangerous instrument, as he says, much more difficult and pernicious to the mother than cephalotripsy in cases of not very narrow pelvis; more difficult and hazardous than embryotomy.

Prof. Chiara's conclusions, with slight alterations in order to overcome the peculiar Italian expressions, are as follows: first, the general law is that shoulder presentations, the seventh month of pregnancy being past, require version. Second, the necessary conditions for the operation being absent, this is contra-indicated. Third, there are absolute contra-indications to turning, deep shoulder impactment is a permanent contra-indication, and the sticking of it to the pubic arch shows that the second stage of spontaneous evolution has already been accomplished. Fourth, spontaneous evolution is a phenomenon of more frequent occurrence and less dangerous and difficult than authorities admit. Fifth, finding an absolute and permanent indication for turning in shoulder presentation, we ought, if the fetus is alive, to look for spontaneous evolution, helping the latter with means that do not injure the fetus. The fetus being dead, we should resort immediately to embryotomy.

Obstetrics is practised here with the utmost antiseptic precaution, even in a greater degree than in Vienna.

THE LYING-IN CHAMBER.—This is a large airy room, with hard-wood floors and with walls that can be thoroughly disinfected. The bed is made so that it can be folded upon itself, making it one-half as long as usual. This arrangement is so that when the bed is folded on itself all the ordinary obstetrical operations can be performed with ease, as the bed is now the height and length of the usual operating table.

A woman is brought into the lying-in chamber when the os uteri is well dilated, if she is a primipara; if a multipara, she is brought in somewhat earlier. If time is permitted, she has a

carbolic-acid bath before being brought into the lying-in room. The bed-clothes are used only once. During the early stages the woman is left to do about as she pleases, but no unnecessary examinations are made and *never* until the hands are thoroughly disinfected. A vaginal injection is given about the time the head begins to press against the perineum, and as soon as the vulva begins to open the spray is turned on to the parts and kept constantly going until after the completion of the third stage. During the latter part of the confinement, the attending physician is busy making all manner of measurements of the abdomen and pelvis. He also listens carefully for the fetal heart-sounds, from which he decides in regard to the advisability of hastening the labor. The placenta is always expressed, and the fingers or hands never passed into the vulva unless absolutely necessary.

The immediate delivery, with all its details, is done by a midwife, and no pulling or tugging or dilating of the os or perineum is attempted at any time. The parts are frequently washed, and the occiput made to hug the pubic arch by pressing the head up, the tissues of the perineum being between the hand and the head.

If a rupture is threatened, the parts are supported by the extended hand and the edge reinforced, if I may use the term, by drawing down more tissues. The cord of the child is tied by passing around it a little rubber tape, and the child is removed from its mother to be weighed, then washed, and measured in every part of its little body, length, breadth, and thickness, head, thorax, pelvis, and legs. But very little, if any, ergot is given to the mother, and in the course of a few hours she may be seen in the general ward, with her baby in a little cot by her side.

The operating room in this hospital has been recently erected, and I did not see a more elegant one in Vienna, Berlin, Paris, or London. It is about fifty feet square. Two tiers of seats for students are built away from the wall, but with room enough within the square for the operator and his assistants. The temperature is raised from 80 to 100° F., and for twenty-four hours previous to a large operation sulphur is burning in the room. All clothes and linen to be used about the patient are fumigated and placed in closed baskets. Instruments are boiled in a ten-percent solution of carbolic acid and then soaked in a seven-percent solution. Inside of the raised seats is the operating table. The floor is of stone. Upon one side is a pile of disinfected linen. Next to it, a table containing hemostatics; next, one upon which all kinds of restoratives are placed, with a hypodermic syringe filled with brandy or ether ready for use. In a remote corner is a receptacle to receive all soiled clothes. Upon the other side of the operating table are all the instruments in trays, and a battery for emergencies is in a convenient position. At one end of the room are two or three places for washing, around which the director of the clinic and his assistants are seen for some time

previous to the operation scrubbing their arms and hands and cleaning their nails. Two or three instruments for spraying are placed in an appropriate position, and are worked during the entire operation.

It was here that the most interesting operation, if I except Billroth's operation for extirpation of the pylorus, that it was my good fortune to witness, was performed. It was Cesarean section in which both mother and child were saved. The operation was delayed until the os uteri was fairly dilated. The operating room had been thoroughly prepared and the woman properly disinfected. An anesthetic was given and the abdomen repeatedly disinfected, even the hairs along the median line being plucked out. The incisions through the abdominal walls were the usual ones, the only additional procedure being that a thread was passed through the tissues at the upper and lower end of the abdominal opening. The peritoneal covering of the uterus was incised and dissected back about one third of an inch, so that a small piece of the uterine wall could be removed and the peritoneum folded over the end. The position of the placenta was carefully ascertained and an opening made into the membranes surrounding the child, and the feet seized and the child extracted. It was given at once to a nurse for resuscitation, who shook it violently, its head hanging downwards. The placenta was now taken out of the uterine cavity, and carbolized water was used in great quantities. The incision through the walls of the uterus was very carefully closed with interrupted sutures, then a layer less widely separated, and to keep this secure the chief midwife sewed over and over with catgut sutures the peritoneum, until it seemed absolutely impossible for anything to get into the abdominal cavity from the uterus or from the abdominal cavity into the uterus. The external wound was closed by the usual method. Neither cotton-batting nor any other of the usual dressings were applied on the outside, but a flat bag of shot, weighing from two to six pounds, was laid on the abdomen. Drainage through the vagina: ice over the hypogastrium: the woman made a good recovery.

I had the opportunity of examining this woman's pelvis a few days before the operation. I could feel very plainly the promontory of the sacrum, and should judge that the conjugate was about two and one-half inches. The os was dilated to the size of a half dollar and craniotomy could have been well performed, but Chiara was intent on trying to save not only the mother's, but also the child's life. He succeeded in doing both.

None of the grave complications which are dreaded were present in this case. The hemorrhage after the incision through the uterine peritoneum was very slight, and after the extraction of the child only a moderate amount of blood was lost. After the wound in the uterus was closed, friction was made over the organ till it was firmly contracted, the abdominal opening was then

closed as I have stated. My notes do not state whether or no a rubber cord was placed around the uterus at the supra-vaginal junction.

Case I.—Coming to speak of practical work, the first thing I noticed was the management of occipito-posterior positions. I was sorry to find that they knew nothing of our Dr. Sawyer's method, and the usual way of treating these cases is to apply forceps. First along the side of the mother until rotation has taken place. This brings one blade of the forceps under the symphysis, when they are taken off and again applied along the sides of the mother.

Case II.—In difficult breech presentations, they do not favor the use of the forceps, as has been suggested by some excellent authorities, but simply bring down one of the feet. In other cases, they even recommend the blunt hook, which is a practice we would hardly suggest until many other procedures had been tried and proved of no avail.

Case III.—A patient with uremic poisoning was in the eighth month of pregnancy and commenced to have dyspnea. Albumin was discovered in the urine and a purge was administered. No relief came, and it was decided to take no more risks in regard to the mother's life and a catheter was introduced and in the course of eight or ten hours labor commenced. She had no convulsions, and the child was born alive. The albumin rapidly disappeared.

Case IV.—Attempts had been made to reduce an inverted uterus according to the usual methods, but without success. The tumor in the vagina was pulled down and a wire ligature placed around it, which was daily tightened a little until about the eighth to the twelfth day the mass came away. Antiseptic precautions are taken throughout this operation to prevent septicemia.

Case V.—I did not witness this operation, but I saw the patient a few hours after. The cause of the removal of the uterus was a stenosis of the pelvis from a bony growth. The operation lasted about three-quarters of an hour, and the child was saved. The Porro was done in preference to Cesarean section in order to save the woman the danger of a second operation. In a slightly contracted pelvis, the Cesarean section would have been done and in a case of pregnancy the second time, the labor would have been induced at the seventh or eighth month and the child saved. On the eighth or tenth day after the operation the stitches were all removed, and the patient was around the ward doing well.

Case VI.—Laceration of the cervix; this accident is treated by the cautery or as they say "burning." The operation which is done so frequently in our country is not well thought of there; the particular argument used against it being, that if a woman has another child, there will be another laceration. The curette

is frequently used, and all hypertrophied tissues either upon the neck of the uterus or within the canal are scraped away.

Case VII.—Extirpation of the spleen; this abdominal tumor was supposed to be ovarian. Usually a diagnosis is made by tapping and the fluid examined by the microscope, but in this case the precaution was not taken. Upon opening the abdomen, the tumor was found to be a cyst of the spleen filled with echinococci. These were thoroughly scraped out, the cavity cleansed, and the edges of the cyst stitched to the abdominal walls. A glass drain was placed at the bottom of the wound, and it was thoroughly washed out with bichloride and dressed with iodoform, and the woman made a good recovery.

Case VIII.—The diagnosis of tumors within the abdomen was not usually made out until after the abdomen was opened. A case was presented with two growths within the abdomen. It was supposed from the pallor of the patient, and the rapidity with which the tumors increased, that they were sarcomatous. The abdomen was opened with all antiseptic precautions. Preparations for every possible emergency were arranged, and upon opening the abdomen it was found that the growths were fibroids. The stump was transfixed by a large double thread and tied on either side. The top of the stump was cut out so that it was cup-shaped and the peritoneal covering brought over it and stitched with ordinary black silk. Everything was dropped back into the cavity and the abdominal wound closed. The temperature rose one and a half degrees the third day, and the woman made an excellent recovery.

Case IX.—Abdomen opened for supposed fibroid, but found to be a dermoid cyst. The other ovary was also found to be cystic. The diseased part was amputated, the hemorrhage controlled by Paquelin's cautery, and the healthy part of the ovary dropped back into the abdominal cavity, which was then closed by the usual method. Chiara was particularly conscientious in regard to the extirpation of the ovaries. He always saved enough healthy ovary, if possible, so that the woman could conceive if she had the opportunity and it was her duty to do so.

Case X.—Sarcoma of the Ovary. At this operation it was found that extensive adhesion had taken place, and only a part of the neoplasm could be removed. The covering of the growth was stitched to the abdominal walls and the cavity thoroughly drained, and an iodoform dressing applied twice each day. It was estimated that it would take about six weeks for this cavity to fill in. Iodoform was the principal dressing used, and she had but little, if any fever.

Case XI.—Pelvic Hematocele. If a woman goes into collapse with symptoms of hemorrhage, and continues to get into a more critical condition, the abdomen would be opened. If she rallies quickly, there would be hopes that it would be absorbed without

operation. If the fluid remained, it would be regarded as good practice to draw it away. The same idea in regard to extra-uterine pregnancy as a cause of pelvic hemocele obtains with them as with us.

Case XII.—Pelvic Cellulitis and Peritonitis. Ice on the abdomen, with enough morphine to quiet pain, is the treatment during the early stage. When the inflammatory stage is past, use hot poultices; keep the patient still, and if any hardened points can be felt they are painted over with iodine, and iodine water douches are ordered. But little confidence is placed in such remedies as iodide of potassium and muriate of ammonia as absorbents. If fluctuation is detected, the antiseptic needle is used, and the pus or serum is drawn away. If the pus continues to collect, a drain is inserted.

Case XIII.—Cases of chronic inflammation of the uterus are treated by application of iodine and hot-water douches, to which the tincture of iodine is added. Pastils of alum and sulphate of copper are sometimes introduced into the cervical canal. Intra-uterine injections, particularly of the tincture of iodine, are very frequently used. If done antiseptically, and rest insisted upon after, no bad results occur.

Case XIV.—Closing of the Vagina for Prolapse. After the menopause, if the uterus and appendages are prolapsed to such a degree as to cause great trouble and suffering, the vagina is closed by a plastic operation. I saw operations of this kind, and they appeared to be perfectly successful, the patient being relieved.

The following objections are made to the Tarnier forceps: first, they cannot be made antiseptic; second, if applied and force exerted, you do not make this force in the line of the axis of the superior strait; third, you are making traction without knowing how much compression force you are using.

Hypnotism was practised to some extent, particularly in nervous diseases. One case of hystero-epilepsy was particularly interesting. It was of long standing and had been treated with electricity, tonics, etc., with the hope that, as the young woman developed, the attacks would become diminished. But they continued, and the question of extirpating the ovaries had been considered and was still under advisement. After an intermission of weeks she began to have these again. She would fall upon the floor, kick violently, and cry out, and presented in every respect all the phenomena of this distressing disease. Dr. Kirsch, one of the assistants in the clinic, after calling her attention sharply to a little looking-glass or the ticking of a watch, placed his thumbs over her eyes, she was perfectly still and asleep in a moment. She was put to bed and remained perfectly quiet for some hours until the same doctor approached her bedside, spoke her name rather sharply, when she opened her eyes and again became per-

fectly quiet and was soon around the wards. They do not pretend to know the pathology of hystero-epilepsy, nor make any pretensions to any particular power in order to produce hypnotism. It is believed that almost any person with a well-balanced nervous system could produce this state in a hysterical woman. Hypnotism was becoming very frequent, and public exhibitions were being given to such an extent, that some time last year the government authorities in Italy prohibited its performance except for medical purposes.

DR. BAYARD HOLMES read the following paper, entitled:

THE BACTERIOLOGICAL EXAMINATION OF AN EXTRAUTERINE FETUS,
AND THEORETICAL CONSIDERATIONS OF THE BACTERIOLOGICAL
CONDITION AND FATE OF DEAD, RETAINED FETUSES.

I.—These nine tubes of nutrient gelatin contain pieces of the different organs of an extrauterine fetus, which was removed by Dr. Christian Fenger, in the Milwaukee Hospital, on the 7th of March last. The diagnosis of extrauterine pregnancy had been made some months previous by Dr. Senn, and the subsequent death of the fetus had been recognized by Dr. Mackie.

The vagina had been rendered as sterile as possible before the operation by means of the antiseptic tampon and irrigation. The incision in the posterior wall of the vagina was made with Paquelin's cautery, and a way opened between the rectum and vagina with dull instruments. The sac about the fetus was then cut through with the cautery, the short forceps applied to the presenting head, and the fetus delivered. Everything was done under the strictest antiseptic precautions. The duration of the operation was about two hours. The fetus presented a very fresh and natural appearance, though it was a little softened. It had been dead two months.

As soon as the fetus was delivered, it was wrapped in a large piece of carbolized gauze, and conveyed to an adjoining room, where everything was ready for this examination. Here the large cavities were quickly opened with the sterilized knife, and pieces of the various organs and their contents removed with instruments sterilized by heat. These pieces were put in the liquefied blood-serum gelatin, which was then allowed to cool. Ten tubes were used in the examination. One was unfortunately broken in the laboratory after it had been kept long enough to prove its sterility. The culture medium was a twenty-per-cent solution of gelatin in peptonized beef-tea, to which an equal quantity of sterile hydrocele fluid had been added. This gave a medium which contained only ten per cent of gelatin. It coagulated if heated above sixty-two degrees Centigrade, but had the advantage of being very nutrient and yet being liquified by the action of certain bacteria.

With one exception, all of these tubes which I now have the

pleasure of presenting to you for inspection are, after almost four months, solid and unchanged. This one contains a piece of the skin cut from the abdominal wall of the fetus. Within forty-eight hours after implantation, a small, white, liquefying colony was noticed at the side of the little piece of skin. Examination showed that it was the *bacillus subtilis*. Now the gelatin is completely liquefied, and rendered turbid by the bacteria which have been mixed with it in transportation and handling. There is no doubt but that this was an accidental infection either during or after the operation.

In the eight solid tubes remaining, you will see some of the hair and adherent sebaceous matter, the brain, an inch of intestine and its contained meconium, a piece of the heart, a piece of the liver, a piece of the lung, one of the phalangeal bones, and one perfectly transparent tube which contains a portion of the fluid from the abdominal cavity.

This examination is conclusive evidence that the organs examined were free from any living bacteria or their spores that are capable of growing in the culture medium used.

If any evidence of the perfectly sterile condition of this fetus and its membranes were wanting after it had been retained two months subsequent to its death in the abdomen of the mother, this examination would seem to supply that want. Could we be certain that the culture medium used would support the life of all bacteria, nothing more could be desired. We may, however, safely assume that this fetus and its intestinal contents were perfectly sterile.

II.—During the past ten years, the burden of bacterial research has proven conclusively that the healthy human body is free from all living micro-organisms.

The fate of bacteria introduced into the circulation of healthy animals has received some attention. It may be safely said that non-pathogenic bacteria cause no more disturbance than an equal quantity of finely divided, lifeless vegetable matter. They are quickly taken up by the white blood-corpuscles, and eliminated by the lymphatic system, or remain imbedded in the reticulum of some of its glands.

The pathogenic bacteria also, in some cases at least, meet with a similar fate, being unable to overcome the normal physiological resistance of the healthy host. Thus even the *Bacillus anthracis* was shown by Feser (1) to be unable to invade rats that had been fed on flesh; though, after having been restricted to a vegetable diet, the same animals fell easy victims to inoculations. Birds, under ordinary conditions, resist inoculations of anthrax. Pasteur (2) has shown that this is due to the high temperature of the order, which is little below the limit of multiplication of the bacillus in artificial culture mediums. If the temperature of the fowls is reduced two or three degrees by immersing the lower

portion of the body in cold water, they become susceptible to inoculations. Passet (3) finds that the *Staphylococcus cereus albus* and *flavus* produce no action when injected into the injured subcutaneous tissues of animals, although they produce suppuration in man. Max Schüller (4) concluded from his experiments on animals, even before the true bacterial origin of tuberculosis had been demonstrated, that the infection of bones and joints did not take place as a rule after injection of tubercular matter into the circulation without previous contusion of the selected part, or its irritation by injected chemicals. Koenig (5) arrives at the same conclusion from a clinical consideration of tuberculosis. It is probable, therefore, that the bacilli in the circulation are eliminated or destroyed.

When pathogenic bacteria are introduced into the blood current after the mechanical or chemical injury of some selected part, they multiply only at this point of diminished physiological resistance, although their presence can be demonstrated in other parts of the body. According to Huber (6) the *Bacillus anthracis* multiplies entirely within the blood-vessels in which stasis has been produced. In distant parts of the body, only scattered, single, non-vegetating individuals are found, and these are frequently contained in the reticulum of white blood-corpuscles. That these scattered bacteria are alive has been shown by Rosenbach (7) in the case of the *Staphylococcus albus* by means of culture methods. Huber found that bacteria never passed outside of the blood-vessels into the edematous or suppurative (?) exudate.

The resistance of the blood may be so low that multiplication of the invading microbe takes place in the circulating blood itself. Such a condition is clinically termed septicemia in distinction from sapremia and pyemia. It usually follows one of these conditions. It may, however, be due to the invasion of a peculiarly powerful bacterium, or an unusual susceptibility in the host invaded.

Nearly all bacteria, under certain circumstances, resort to a method of development and reproduction called spore formation. It begins with the appearance of a very small granule in the protoplasm of a hitherto vegetating cell. This granule increases in volume, and becomes a strongly refracting sharply outlined body, which rapidly reaches a definite size, and then represents a perfect spore. The spore is always smaller than the mother cell. The protoplasm and former contents of the cell disappear in proportion to the growth of the spore. Finally, the spore appears in the delicate membrane of the mother cell suspended in a clear, watery fluid only. The causes of spore formation are not yet fully known in all species. In some it seems to depend upon the unfavorable condition of the nourishing medium, while in others it bears no relation to vegetation. Spores endure vicissitudes of

heat and cold and chemical action better than vegetating cells, and also resist the action of staining fluids.

It is probable, though, so far as I know, yet undemonstrated, that the pyogenic bacteria leave behind in the cicatricial tissue after suppuration such lasting spores. Of this there is abundant clinical evidence in the case of such diseases as pneumonia, rheumatism, osteo-myelitis, and erysipelas. In individuals that have once been subjected to an attack of one of these diseases, sudden outbreaks of the long absent disease follow slight causes which tend to produce a diminished physiological resistance.

The fate of bacteria in the circulation may be thus summarized:

1. They may be wholly destroyed without multiplication.
2. They may multiply at one or two points of diminished physiological resistance, and remain only scattered and non-vegetating in other parts of the body.
3. They multiply in the general circulation everywhere.
4. After localized multiplication, they may produce lasting spores which remain a long time imbedded in the cicatricial residue, and, at some later period, under favorable circumstances, these may again germinate and multiply, and give rise to their own peculiar form of inflammation.

I recognize the fact that the formation of spores in the living body has yet to be demonstrated, but it seems to me that the clinical evidence is sufficient, when considered with the well-known laws of spore formation in exhausted artificial culture mediums, to warrant this assumption for theoretical purposes.

III.--When dead animal tissue is introduced into the living animal body, it produces no considerable inflammation. A multiplication of the surrounding cell elements takes place with increased vascularization. The dead tissue is invaded, taken up in part by white blood-corpuscles, and carried away. There may be a greater or less residue, surrounded by a mass of cicatricial granulations. The neighboring lymphatics may contain portions of the more resisting and often pigmented residue. We see this removal illustrated every day, as Senn (8) has shown in the case of catgut ligatures. When they are perfectly antiseptic, they never give rise to any undue inflammation or suppuration. Again the same process is observed in subcutaneous operations, in cerebral hemorrhage, hemorrhage about simple fractures, and into the large joints. The completeness of absorption depends, in these cases, upon the amount of the hemorrhage, and the age and nutrition of the individual. Suppuration or other unfavorable results take place with extreme infrequency.

The fate of a retained, dead fetus, therefore, whatever its position, must depend almost entirely upon its bacterial condition. If it contain no pyogenic or putrefactive bacteria, one would expect it to produce no more inconvenience than would

result from its size and weight. It may become macerated, mummified, or calcified. By pressure atrophy, it may find its way into the intestinal tract. It may be discharged with a living fetus. It may later become infected, and give rise to all the serious consequences of suppuration. Or, it may be artificially removed.

IV.—There is little doubt that the living fetus is free from all micro-organisms. Leopold (9) put young fetuses into the abdominal cavities of rabbits under strict antiseptic precautions, and found that they gave rise to no suppuration. They were either wholly or partly absorbed, or they remained unchanged, or they were reduced to a small residue resembling lithopedia. Had these fetuses contained any living pyogenic bacteria or their spores the warmth of the abdomen and the absolute lack of resistance in the dead fetuses would have resulted in their rapid destruction, and in suppuration in the living tissue about. Küchenmeister (10) has collected a large number of cases in which extrauterine fetuses have remained in the human abdomen many years, sometimes almost unchanged, and at other times in various states of absorption.

Of all parts of the fetus, the meconium, being itself without possibility of physiological resistance, would be most likely to show the presence of infection. Its infection might take place either through previous infection of the amniotic fluid from the mother's circulation, or through infection of the fetus by way of the placenta. The amniotic fluid might be infected more easily than the fetus, as it has been shown by Wiener (11) that when coloring matter was injected into the circulation of the mother, the amniotic fluid was stained at the end of a few minutes, and the meconium was also soon colored by the swallowed fluid, while at the same time, not a trace of coloring matter could be found in the kidneys or other organs of the fetus. We might also suppose that occasionally the amniotic fluid would be infected from the interior of the uterus itself, as the lymphatics of the amnion have been shown to be connected directly with those of the uterus. Escherich (12) has examined bacteriologically the meconium of three infants that died during birth. Within a few hours after the birth of the fetuses, their abdomens were opened, under every indicated precaution, and double ligatures put about one or more loops of intestines. These were then washed with a sublimate solution, and opened with a sterilized knife. From the contents of these loops, inoculations were made in peptonized beef-tea gelatin, and in liquid sterilized blood-serum. After incubation for several weeks, no change was discernible; so that, in these three cases at least, the intestinal contents were free from any micro-organism that would grow in the mediums used. The same experimenter found the meconium of infants that lived only a few hours infected by very few kinds of bacteria, and these in small numbers; but if the child lived a day or more, the individuals, as

well as the species, became quite numerous. There is no doubt, therefore, that it furnishes abundant nutrition. Breslau (13) has shown that the presence of swallowed air in the intestines of newly born infants can be demonstrated very early by means of percussion. Escherich considers that the meconium is infected by germs swallowed with the air and dust, in the first efforts of sucking.

The examination of the meconium chemically, while less reliable than the preceding method, furnishes a valuable confirmation. Search was made by Förster (14), Zweifel (15), and Müller (16) in the meconium of still-born, for products of putrefaction such as indol and phenol, with negative results.

Thus by three separate methods the fetus has been shown to be free from all micro-organisms, and, therefore, when retained in the body of the healthy mother after its physiological or pathological death, is incapable of giving rise to suppuration or destructive inflammatory disturbances.

V. It frequently happens in twin pregnancies within the uterus that the death of one of the fetuses results after it has attained a considerable size. In these cases the dead fetus and its annexa seldom give rise to suppuration or inflammation, or hasten in any manner the delivery of the still living infant. At times, also, fetuses at full term are retained a long time within the uterus, through one cause or another, without producing any unfavorable result.

Bandl (17) cites thirty cases of pregnancy in a rudimentary horn of the uterus, seven of which were retained six months or longer, and in no case did suppuration ensue. It would doubtless be difficult to diagnose a tubal pregnancy from one in a rudimentary horn, even on the cadaver, after any considerable suppuration. This may account for the limited number of observations of this occurrence.

Since infection of a dead fetus in the uterus or in a rudimentary horn is such a rare occurrence, the infection of a fetus outside this organ and far removed from infection from the interior of the uterus, the cervix, or the vagina, one would expect to be much more rare.

Unfortunately, this *a priori* conclusion does not seem to be verified by experience. Kiwisch (18) collected one hundred cases of extrauterine pregnancy of all kinds, and it appears from the summary of his cases as given by Bandl that about thirty-seven per cent of these fetuses became infected.

17 died of peritonitis more or less acute.

4 died of peritonitis after the fetus had been long retained.

9 died through a long-continued suppuration and perforation.

7 recovered after spontaneous elimination.

Hecker (19) collected one hundred and thirty-two cases, out of which it seems that about forty-seven per cent became infected.

18 died of hectic.

12 died of peritonitis.

28 recovered after discharge of the fetus through the rectum.

15 recovered after discharge of the fetus through the abdominal wall.

Out of five hundred cases of extrauterine pregnancy collected by Parry (20), two hundred and forty-eight went to or beyond the full term; and, out of this number, seventy fetuses were discharged either through the rectum, the vagina, or the abdominal wall. The history of most of these cases shows that this issue was brought about by suppuration, and consequently through infection. Thus, in Parry's cases, twenty eight per cent can be considered as infected. During the first year, twelve per cent of the whole number terminated in suppuration; during the second year, five per cent; during the third year, two and a half per cent. After this time, less than two per cent were infected each year.

The examination of the statistics from all these sources would lead one to think that there are some sources of infection of dead extrauterine fetuses which are not present in cases of cerebral hemorrhages, pelvic hemorrhage, hemorrhage into the large joints, or about simple fractures. In these cases absorption is the rule, and infection and consequent suppuration rarely take place.

VI.—The three possible methods of infection which seem to be worthy of consideration are the following:

1. Infection of the fetus before its death and subsequent suppuration.

2. Simple auto-infection, so-called.

3. Infection through the proximity of pyogenic bacteria or their spores left behind from some previous suppuration.

The first of these methods seems hardly worthy of consideration. The difficulty of the passage of the microbe from the infected blood of the mother is clearly shown by the experiments of Bollanger (21). He injected into the blood of pregnant sheep the living anthrax bacilli. After a sufficient time had been allowed for the disease to show itself, the animal was killed. The fetus was then removed, and found perfectly free from bacteria. Klotz (22) found in the whole literature only six cases in which the fetus was infected with measles during intrauterine life.

A simple auto-infection certainly cannot account for such a large per cent of infection of extrauterine fetuses, since we have seen that this is such a rare occurrence within the uterus itself and in the rudimentary horn. It has been impossible for me to find any statistics relative to the frequency of infection of hemorrhagic products in different parts of the body. I can only appeal to the experience of every surgeon to testify for me that it is extremely rare. The consideration of Parry's cases, in which a large per cent became infected during the first year, with a

gradually diminishing percentage afterwards, is, in itself, quite significant, and shows plainly that whatever the source of infection is, time alone is a very insignificant element.

I now pass to the third possible source of infection. Leitzman (23) considers the contiguity of septic germs as a possible source of infection in these cases, and Spiegelberg (24) declares that lithopedia may excite suppuration, and that the frequency of this issue is encouraged by labor. There seems to be one factor which Bandl admits to be largely concerned in the etiology of extrauterine pregnancies which has not received consideration. I refer to the presence of residues of old inflammations in close proximity to the dead fetus. There is every reason to believe from the consideration of Martin's (25) researches and compilation that these residues, which result in the occlusion of the tubes and consequent pathological fetation, are the result of septic or infected inflammation; and it is probable, although, as I have said, yet unproven, that these residues, in a large majority of cases, contain lasting spores. By pressure atrophy from the weight of the dead fetus, these are brought into connection with a large and rich pabulum, in which they germinate and multiply, and from which they infect the surrounding living tissues. In these they give rise to suppuration, which infiltrates the connective tissue in the direction of the least resistance; and subsequently spontaneous elimination of the fetus may take place. There seems to be but one thing to be proven to render my consideration of this most potent cause probable. It remains to be shown that spore formation in pyogenic bacteria does take place within the living human body, and that these spores are left behind in the cicatricial tissue resulting from suppurating granulation.

VII.—If further investigation and research should prove the presence of lasting spores in previously infected tissues and the possibility of their causing subsequent suppuration, their presence should be considered when operating for the removal of living or dead extrauterine fetuses, or for diseased tubes. In case any doubt of the sterility of such a fetus or its surroundings should exist, the fear of the presence of lasting spores would be an additional indication for the use of the antiseptic drain, and the treatment of the sac as an abscess cavity.

It would also render the prognosis less favorable in cases where it is deemed advisable to produce death artificially, early in the life of such an extrauterine fetus. Especially should caution be exercised in case of puncture, as this means might make a way, and, at the same time, furnish a material for nutrition for the latent spores about.

Literature.

(1) Feser: "Beobachtungen und Untersuchungen ueber den Milzbrand." *Deutsche Zeitschrift für Thiermedizin*, 1880, VI., 166.

- (2) Pasteur: Cited by Sternberg. "Bacteria," New York, 1885, p. 266.
- (3) Passet: "Untersuchungen ueber die Aetiologie der eiterigen Phlegmone des Menschen." 1885. Ref. in Deutsche Zeitschrift für Chirurgie, Bd. 23, p. 379.
- (4) Max Schüller: "Experimentelle und histologische Untersuchungen ueber die Entstehung und Ursachen der scrophulösen und tuberculösen Gelenkleiden." Stuttgart, 1880, S. 18 et seq.
- (5) Koenig: "Die Tuberculose der Knochen und Gelenke," 1884, p. 36.
- (6) Hüber: "Experimentelle Untersuchungen über Localisation von Krankheitsstoffen." Virch. Arch., Bd. 106, S. 36.
- (7) Rosenbach: "Mikro-organismen bei den Wundinfectionskrankheiten," 1884, p. 41.
- (8) Senn: "Experimental Researches on Cicatrization in Blood-vessels after Ligature," 1885, p. 101 et seq.
- (9) Leopold: "Experimentelle Untersuchungen über das Schicksal implantirter Foeten." Arch. f. Gyn., Bd. XVIII., S. 53, 1881.
- (10) Küchenmeister: "Ueber Lithopädien." Arch. f. Gyn., Bd. XVII., S. 153, 1881.
- (11) Wiener: "Ueber die Herkunft des Fruchtwassers." Arch. f. Gyn., Bd. XVII., S. 26, 1881.
- (12) Escherich: "Die Darmbakterien des Säuglings." Stuttgart, 1886, p. 15.
- (13) Breslau: Zeitschrift für Geburtskunde, 1866.
- (14) Förster: Wiener Med. Wochenschr., 1858.
- (15) Zweifel: Arch. f. Gyn., Bd. VII., 1875.
- (16) Müller: "Ueber den normalen Koth des Fleischfressers." Zeitschrift für Biologie, 1884.
- (17) Bandl: "Die Krankheiten der Tuben, der Ligamente," etc., 1886, p. 70.
- (18) Kiwisch: Verh. der phys. med. Ges., Würzburg, 1880.
- (19) Hecker: "Beiträge zur Lehre von der Schwangerschaft ausserhalb der Gebärmutter." Monatschrift für Geburtskunde, Bd. XIII., 1859.
- (20) Parry: "Extrauterine Pregnancy." Phila., 1876, p. 164 et seq.
- (21) Bollanger: Deutsche Zeitschrift für Thiermedizin, Bd. II., S. 341, 1876.
- (22) Klotz: "Beiträge zur Pathologie der Schwangerschaft." Arch. f. Gyn., XIV., p. 453, 1887.
- (23) Leitzman: "Zur Feststellung der Indicationen für die Gastrotomie bei Schwangerschaft ausserhalb der Gebärmutter." Arch. f. Gyn., Bd. XVI., p. 323, 1880.
- (24) Spiegelberg: Ref. by Lusk. "The Science and Art of Midwifery." New York, 1882, p. 318.
- (25) Martin: "Ueber Tubenkrankheiten." Zeitschrift für Geburtshilfe und Gynaecologie, Bd. XIII., p. 298, 1886.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, May 4th, 1887.

JOHN WILLIAMS, M.D., *President, in the Chair.*

Uterine Appendages.—Mr. Lawson Tait showed a series of specimens removed on account of inflammatory disease.

Malformation of the Fallopian Tubes.—Mr. Alban Doran exhibited this specimen, in which there was an accessory ostium, surrounded with fimbriae.

Spinal Meningocele.—Dr. John Phillips showed for Mr. Reginald Clarke the head of a seven months' fetus in which there was dystocia, owing to a meningocele between the axis and occipital bone. The child presented by the breech.

Fibro-Myoma of the Ovary.—Dr. Carter said that this tumor, which weighed 10 $\frac{3}{4}$ pounds, had only been noticed for six months. The patient had made a good recovery.

A Pair of Midwifery Forceps were shown by Dr. Paramore for Dr. Harlam, with a lateral hinge in the handle of the upper blade.

A Speculum was exhibited by Mr. Butler-Smythe which folded like a tongue depressor.

ON HEMORRHAGIC PARAMETRITIS.

DR. MATTHEWS DUNCAN related three cases of severe bleeding in cases of parametric abscess. In the first case, the bleeding occurred on opening the abscess and was easily restrained; the woman recovered. The bleeding was probably only a profuse oozing. The second case he did not see; the bleeding was rapidly fatal and flowed through the bladder, the abscess having spontaneously opened into that viscus. In the third case, also fatal, the bleeding occurred in repeated flows through the bladder, along with pus and sloughs. The bleeding arose from gangrene laying largely open the external and internal iliac veins at their junction. This case he regards as one not of ordinary parametric abscess, but of progressive gangrene of cellular tissue. Of this latter disease, he has recorded a case in an appendix to his work "On Perimetritis and Parametritis."

DR. GRAILEY HEWITT referred to the particulars of a case he had published, and which Dr. Matthews Duncan had mentioned in his paper. It was entirely due to physical injury, and was not at all analogous to the cases of Dr. Matthews Duncan.

DR. WILLIAM DUNCAN had seen two cases in which, after bursting of the abscess, there was oozing of blood for several days from the pyogenic membrane lining the abscess cavity. He thought

that it would have been more correct if Dr. Matthews Duncan had given the cases as hemorrhage into the sac of a parametric abscess, and deprecated the use of the title "Hemorrhagic Parametritis."

DR. GALABIN had met with a case in which fatal hemorrhage into a pelvic abscess occurred. The case was originally diagnosed as one of retro-uterine hematocele. Suppuration occurred and discharge through both bladder and rectum; after three months, erysipelas occurred about the vulva, and fatal hemorrhage into the abscess cavity. Extensive burrowing and sloughing in the pelvic cellular tissue was found at the autopsy.

MR. LAWSON TAIT had never met with any such cases as those described by Dr. Matthews Duncan, and thought that they ought to be dealt with by abdominal section before such disasters arrive. Mr. Tait thought the title of the paper should have been "Parametritis Ending Fatally by Hemorrhage."

DR. MATTHEWS DUNCAN thought that the title was of no moment, whether hemorrhagic parametritis or parametritis with hemorrhage.

He knew no reason to regard extravasation of urine as the cause of sloughing, and in a very large number of cases of these abscesses discharging through the bladder he had never met with any evidence of extravasation of urine into the abscess cavity; it might occur, but he knew no evidence of it.

ON THE FREQUENCY OF PATHOLOGICAL CONDITIONS OF THE FALLOPIAN TUBES, AS DETERMINED BY OBSERVATIONS IN THE POST-MORTEM ROOM OF THE LONDON HOSPITAL.

By ARTHUR H. N. LEWERS, M.D.—This paper is the outcome of observations made on the pelvic organs in a series of 100 cases in the post-mortem room of the London Hospital.

As is well known, very contradictory opinions have been held as to the absolute frequency with which dilatation of the Fallopian tubes—hydro-salpinx, pyo-salpinx, and hemato-salpinx—occurs among the general population. Recently, Dr. Henry Coe in his paper, "Is Disease of the Uterine Appendages as Frequent as It has been Represented to Be?" (*AMERICAN JOURNAL OF OBSTETRICS*, June, 1886) says, "Actual disease of the tubes is far less frequent than is generally believed." Others, on the contrary, are of opinion that these conditions are of frequent occurrence. The question of the absolute frequency of the disease of the tubes is one that could only be settled by observations in the dead-house of a general hospital.

Cases where the contents of the dilated tubes were not distinctly purulent, or were not composed of blood, have here been classed as hydro-salpinx.

Disease of the Fallopian tubes, restricting the expression to pyo-salpinx, hemato-salpinx, and hydro-salpinx, was met with in seventeen cases out of the one hundred examined.

A detailed description of each specimen is given in the paper, and a table classifying the chief points of interest in these seventeen cases has been added.

Case.	Age.	Children.	Miscellaneous.	Size of tumor.	Contents of dilated tube.	Communication between dilated tube and uterus.	Possibility of removal.	One or both tubes dilated.	Ovaries recognizable or not.	Pelvic peritonitis.	Mucous polyp.	Fibroids of uterus.	Condition of uterine mucous membrane.	General morbid conditions found.
151	1	1	1	Large walnut.	Clear yellow fluid.	Closed	Could have been easily removed.	Left only.	Both seen.	Present.	1 present.	None.	.....	Mitral disease, ascites, edema of legs, enlargement of liver and kidneys.
240	No note	No note	No note	Large orange.	Right, pus. Left, blood and brown watery fluid.	"	Absolutely impossible to have removed them.	Both.	No trace of either seen.	"	None.	"	.....	General purulent peritonitis, acute pericarditis, right pleurisy, edema of lungs.
350	"	"	"	Hen's egg.	Clear yellow fluid.	Open.	Removal possible.	"	Right found; left not found.	"	"	"	Upper two-thirds of uterine mucous membrane congested, lower third pale, ulcers in vagina.	Cirrhosis of liver, peri-hepatitis, ascites, pleurisy.
444	"	"	"	1 inch in diameter.	Turbid fluid, not purulent.	"	"	"	Both seen.	"	"	"	.....	Aortic aneurism
518	0	0	0	Dilated tube	Pus	"	"	"	"	"	"	"	Greenish.	General peritonitis.
648	6	0	0	Had burst. Left, 1 1/2 in. x 1 in. Right, the same.	Left, blood. Right, thin yellow fluid.	Closed	"	"	"	"	"	Present.	.....	Perforation of cecum.

Case.	Children.	Miscellaneous.	Size of tumor.	Contents of dilated tubes.	Communication between dilated tube and uterus.	Possibility of removal.	One or both tubes dilated.	Ovaries recognizable or not.	Pelvic peritonitis.	Mucous polyp.	Fibroids or uterinus.	Condition of uterine mucous membrane.	General morbid conditions found.
750	6	0	.. ..	Milky fluid.	Open.	Removal possible.	Both.	Both seen.	Pres-ent.	None.	None.	.. ..	Left pleura adherent, capsules of kidneys adherent, cellulitis right leg.
841	0	1	Tangerine orange.	<i>Right</i> , pus. <i>Clos'd</i> <i>Left</i> , empty.		"	"	"	"	"	"	.. ..	Enlarged liver and spleen probably syphilitic, caseous masses apex left lung.
927	N o note	N o note	3 in. <i>Left</i> , long and broad. <i>Right</i> rather smaller.	pus. brown watery fluid.	Open one side, closed the other.	"	"	"	"	"	"	Mucous membrane of cervix, slate gray.	Pericarditis, pleurisy with effusion.
1049	0	0	$\frac{3}{4}$ inch in diameter.	Milky fluid.	Open.	"	Left only.	"	"	"	"	.....	Cavities of both lungs, kidneys granular, liver fatty.
1192	N o note	N o note	Size of cob-nut.	Cheesy.	.....	Doubtful.						.....	" Dropsy."
1241	"	"	Both $\frac{3}{4}$ inch in diameter	Blackish watery fluid.	Open.	"	Both.	"	"	"	"	.....	Erosion around external os, adjoining mucous membrane of cervix red.

[illegible]

DR. GALABIN thought that this communication was of very great value as an addition to the evidence on the subject by Dr. Kingston Fowler. He wished to ask whether the 100 cases recorded were consecutive or selected, as he thought that 17 per cent was a large proportion of cases of distention of the Fallopian tubes. In 302 autopsies of women about the age of puberty at Guy's Hospital, the pathologists had only found 12 cases of distention of tubes and 2 of these were very trivial. This was a proportion of only 4 per cent. There was only one case of pyo-salpinx and a doubtful case, the pathologist being uncertain whether the suppurating sacs were tubes or ovaries; the ovaries could not be found. There were 14 cases of chronic inflammatory disease about the Fallopian tubes, without distention; of the whole 26 cases it was probable that in 7 pelvic inflammation was indirectly the cause of death through the medium of general peritonitis, intestinal obstruction, or in other ways. These included the 2 cases of pyo-salpinx, 1 of hydro-salpinx, and 4 of chronic inflammation without distention. Thus, in 302 cases, there were of chronic inflammatory disease about the tubes 9 p. c.; distention of tubes, 4 p. c.; death indirectly in about 2 or 3 p. c.

MR. LAWSON TAIT spoke in eulogy of Dr. Lewers' paper. He found the conclusions drawn from the post-mortem room, as regards causation, progress, prognosis, and treatment, identical with those which he had been preaching for about ten years on the basis of clinical experience.

He confessed that it was somewhat a staggering thing to find 17 per cent of the women who died in the London Hospital suffering from tubal disease, and this did not include those cases which suffered the most, in which there were adhesions between the ovaries and tubes to the surrounding viscera, more particularly the peritoneal layer lining Douglas' pouch, resulting ultimately in complete retroversion of the uterus with its appendages, and forming one of the most dreadful conditions which the gynecologist had to deal with. When removed, it was difficult for an unskilled pathologist to see anything the matter with them. Dr. Lewers had not included such cases, and they must have been numerous. He thought the explanation of the higher percentage at the London Hospital and the small group at Guy's must be due to locality, and that gonorrhoea was more common among the poor at the East End than on the south side of the river.

At the out-patient department at Birmingham, 10 p. c. of the women who applied for relief suffered from chronic inflammatory disease of the uterine appendages. All these did not require operation. The most staggering conclusion to be derived from Dr. Lewers' paper was the enormous fatality of these diseases. At the London Hospital the death rate was 24 p. c., while at Guy's it would appear to be 25 p. c. For years Mr. Tait had been arguing in favor of operation in order to relieve suffering, but when the pathologists at the "London," "Guy's," and "Middlesex" Hospitals showed a death rate between 24 and 50 p. c., the cry for relief by operation was one which could not be gainsaid. His own results showed that these cases could be relieved by operation with a mortality not exceeding 2 or 3 p. c. The question as to the sterility caused by these diseases might be settled by ascertaining the period between the occurrence of death and the birth of the last child. Mr. Tait agreed with Dr. Lewers that hydro-salpinx seems

to precede pyo-salpinx. He must again thank Dr. Lewers for his patient and valuable investigation.

DR. HORROCKS was surprised at the large percentage of disease of the Fallopian tubes shown in Dr. Lewers' table of cases. He asked if Dr. Lewers could show the specimens. Dr. Horrocks found that in many cases the disease began in the ovary and glued the fimbriated extremity to itself which led to pathological changes in the tubes. In some cases, the affection spread from the vagina to the uterus and from the latter to the tubes. In all his cases there was peritonitis, but in nearly every instance it was a chronic and effete process indicated only by old fibrous bands of adhesion.

MR. ALBAN DORAN noted that it was remarkable to find severe forms of tubal disease so frequent. It must be assumed that milder forms were more common. Catarrh of the tube must involve discharge which probably escaped through the uterus, so as not to produce symptoms. It was not likely that it escaped through the ostium into the peritoneal cavity, else hydro-peritonum would be more frequent, as he had pointed out in his paper on "Papilloma of the Tube." The severe forms of tubal disease with local peritonitis showed how the tubes were a highway from the exterior into the peritoneum. Their frequency amongst the East-End women suggested that they arose more from extension of neglected leucorrhoea and gonorrhoea than from sounding or syringing. Disease of the tubal mucous membrane was more probably caused by the passage of fluids upwards than by extension of inflammation. Extension might occur, but mucous inflammations were generally localized in the genital as in the respiratory tract.

DR. IMLACH regarded Dr. Lewers' paper as important and trusted the investigation would be continued and that pathologists would scrutinize the ovaries and tubes as carefully as they did other organs. The gonorrheal origin of these diseases was often assumed. He had examined a large number of women in two Lock hospitals, but had not found a single example of pyo-salpinx amongst them. The question of etiology was important and could only be settled by chemical investigation of a large series of gonorrheal patients.

DR. MATTHEWS DUNCAN expressed his sense of the great value of Dr. Lewers' paper, but felt the want of further information regarding the cases. He wished for information as to the symptoms, if any, caused by the pathological conditions. It was probable that these pathological conditions were obsolete and evidence only of long past disease. This view was confirmed by the ages of the patients. Mr. Tait had said that in his practice the average age was 27 to 30, and Dr. Lewers' cases were about forty on an average and many quite old. Dr. Matthews Duncan was not astonished at there being evidence of disease in 17 p. c. of the post-mortems, for he had long known that evidence of past or present disease in the region of the uterine appendages was a very frequent occurrence.

DR. WILLIAM DUNCAN thought it most important that out of the 17 cases reported, 14 were over forty years of age, and in only 1 case were definite symptoms of pelvic mischief given, while almost all died from diseases not attributed to tubal mischief, showing the fallacy of the view that most cases require laparotomy.

DR. LEWERS, in reply, said that the cases were as nearly as possi-

ble consecutive and that the inquiry lasted 13 months. There were many cases showing more or less extensive old adhesions not included in his list. He did not think gonorrhœa was more common at the East-End than elsewhere in London, and many of the cases at the London Hospital come from the adjoining districts. He thought hydro-salpinx and pyo-salpinx are stages of the same disease, and the cases in his tables comprised this to a great extent. If further investigation should establish this view, and that pyo-salpinx has a mortality of 40 p. c., we should not be able to resist the conclusion that dilated tubes should be removed.

None of the 17 cases of dilated tubes came from the obstetric wards, though some of the 100 cases examined came from those wards.

ABSTRACT.

1. **Fritsch: Sixty Vaginal Hysterectomies** (*Reprint*).—In this article the author states the conclusions he has reached in regard to this operation, and tabulates the sixty cases in which he has performed it. Seven of the cases (10.1%) died from the operation. In regard to twenty of the cases he is certain that there was no recurrence at the end of the following intervals:

1 at 3 years 2 months	2 at 1 year 10 months.
1 " 3 " 1 "	1 " 1 " 6 "
1 " 2 " 7 "	1 " 1 " 5 "
1 " 2 " 4 "	1 " 1 " 3 "
1 " 2 " 3 "	1 " 1 " 2 "
2 " 2 " 1 "	3 " 0 " 10 "
2 " 2 " "	1 " 0 " 2 "
1 " 1 " 11 "	

Comparing these results with the statistics from Volkmann's Clinic of 131 operative cases of mammary carcinoma:

In	Cases.	In	Cases.
1 month recurrence	7	13-18 months recurrence	5
" 2-6 months "	" 23	" 19-24 " "	" 6
" 7-12 " "	" 12	" 25-36 " "	" 1

and from these figures Volkmann concluded that when one year has elapsed after operation, and careful examination reveals absolutely no trace of local recurrence, it may be hoped that the result will be lasting; after two years ordinarily, after three with almost absolute certainty cure may be predicted. Applying this line of reasoning to his cases of vaginal hysterectomy, F. claims that in two cases certainly, in seven very likely, cure has been established, whilst in the remainder the chances are there will be no recurrence, since the date when this ordinarily occurs, the seventh month, has been passed by many. Such results at these, he considers, speak in favor of the operation, for the statement is even now justifiable that after total extirpation of the carcinomatous uterus recurrence is less frequent than after the extirpation of cancer from almost any other locality. The prognosis for the future depends strongly on the general practitioner. He must learn to recognize the disease in its early stages and impress on his patients the fact that the early extirpation of the carcinomatous uterus offers great hope of cure.

E. H. G.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] OCTOBER, 1887. [No. 10.

ORIGINAL COMMUNICATIONS.

JUNIPER CATGUT: ITS USE IN GYNECOLOGICAL
OPERATIONS.

BY
A. MARTIN, M.D.,
Berlin.

WHEN I reported my prolapsus operations, December 12th, 1885,¹ I intended to point out the method of this operation, as well as the immediate and, in a good many cases, the remote results attained. The majority of the cases then published were stitched with the button suture of silk. Till then I had used catgut in but a limited number of cases—at first, in button sutures with the material formerly universally employed; later, in button sutures with braided catgut; and finally, following Schröder's advice, with *juniper catgut and the continuous suture*. My experience, at that time, did not permit me to speak over-enthusiastically about it. I acknowledged the simplicity of the method, but had to complain of several disadvantages—the relative brittleness, the disagreeable sensation in the fingers of the operator, the occasional premature absorption of the particles of tissue snared between the running loops, and, finally, the fact that often small and even dangerous

¹ Deutsche med. Wochenschr., No. 2, 1886.

hemorrhages formed a disagreeable complication of the healing process.

Still, I did not then give up the attempt. I expected that further careful preparation would furnish a thoroughly satisfactory material; that the fingers would become accustomed to juniper oil as they did to other disinfectants; that more extensive experience would teach the necessary degree of constriction, and that I would then be able to benefit by the indubitable advantages both of the material and of the method, viz., simplicity of the procedure, freedom from all irritation in the wound, extensive coaptation of the raw surfaces, and delivery from that often so annoying necessity of removing the sutures from a cavity but recently reduced in size by a tedious operation.

In this expectation I have not been disappointed. My subsequent experience allows me to recognize in the *continuous suture with catgut* a great advance in the technique of *gynecological operations*. This remark applies more particularly to plastic operations on the perineum and vagina, and, to some extent, to operations on the cervix. In the application of catgut to intra-abdominal operations, some other factors likewise enter into the consideration; but, at all events, even for these latter this suture material possesses advantages which must not be overlooked.

This will be shown in the following report.

The catgut I employ is known by the trade-mark "Wiesener," furnished in Germany by Hartmann, of Heidenheim, in two thicknesses, Nos. 2 and 3. Of this, a pretty large quantity at a time is wound on glass plates, and immersed in a one-tenth-per-cent solution of corrosive sublimate, for six hours. The entire quantity is then taken out, dried with a clean towel, and placed in a mixture of two parts of alcohol and one part of oil of juniper, contained in large glass vessels with ground glass stoppers, and is ready for use from the sixth day on. When required, the necessary quantity is taken out and kept ready, during the operation, in a small saucer filled with a preservative solution. Prepared in this way, the material possesses great tenacity, so that the threads break very rarely. At the same time, they become so flexible that they can be readily tied, provided the wound margins to be united do not offer too great a resistance to coaptation. The catgut threads must always be tied with a triple knot, and a long end allowed to hang free.

Of course, in employing the button suture, catgut must be grasped more firmly than silk; hence the skin of the operator's fingers easily cracks, and the fingers get sore more quickly than with silk. But these drawbacks must not be considered so serious as to cause us to dispense with a suture material which does not irritate the stitch-holes, which dissolves after having kept the wound surfaces sufficiently long together, and thus obviates the often inconvenient necessity of removing the sutures.

This latter advantage becomes much more evident with the *uninterrupted thread*, as first employed in gynecological operations by Broese, and subsequently warmly recommended by

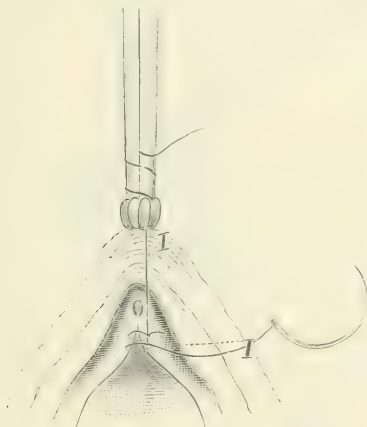


FIG. 1.—Beginning of the continuous catgut suture.

Schroeder.¹ In sewing with the running thread, I commence by inserting it first at one end of the wound margin, and making a double knot. A short end of the thread then remains on the one side, and is drawn rather taut by the assistant, by means of a ligature forceps or that of Baumgaertner. The needle is then inserted far enough from the wound margin for the latter to bear a moderate strain, this differing with the tissue. In wounds of slight extent, the needle passes at once under the entire wound surface, emerges on the opposite side at a point

¹ Gesellsch. f. Geb. u. Gyn. zu Berlin, June 12th, 1885.

corresponding to that of insertion, drawing the whole thread after it. The thread is drawn taut, and so held by the assistant that the wound surfaces come in complete contact.

Whenever the accurate coaptation is effected with difficulty, the needle is not carried through the entire wound surface at once, but only through a part. *A tier is to be placed in the depth of the wound*; that is to say, the wound surface is to be so far united—first in the median line—as this can be done without

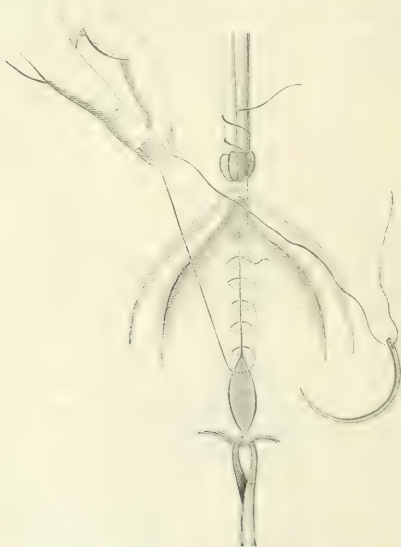


FIG. 2.—Continuous catgut suture.

undue traction on the raw surfaces. In forming this tier, the several needle punctures need not be too close together. The thread must not be drawn too tight, nor should too much tissue be taken on each needle.

The tier is continued as far as the external margin of the wound, to the border of the skin. Here the needle comes to the surface, and takes a few stitches into the adjoining skin. If the edges of the skin can now be easily approximated, the

wound is at once closed, and the suture completed. If the wound margins come together with difficulty, a second tier is formed above the first.

The *suture is completed*, either by knotting together the ends (I-I, Fig. 1), if they have come close enough, or else, by *knotting only the end which is in the needle*. In that event, the free end is drawn far enough out of the eye of the needle that after the last stitch it hangs sufficiently far from the distal

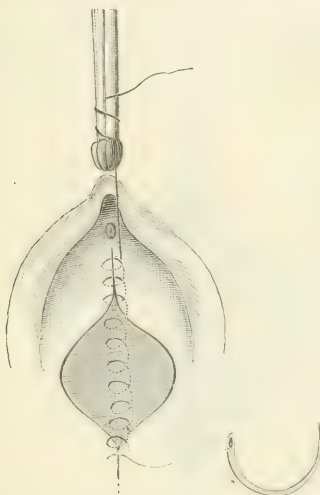


FIG. 3.—Deep row of tier-suture.

end of the suture track. Then this end, held here, is knotted with the double thread which has remained in the needle.

At first two difficulties must generally be overcome. The thread may be drawn too tight, so that the tissue between it is strangulated; or else, the thread is torn either at once or after having been injured by the sharp edge of the needle.

The former difficulty is undoubtedly encountered by every one who has tried this mode of suturing without having seen it done by others. It has happened to me mainly in stitching the

external skin. Since then, I see to it that the thread is drawn only tight enough to bring the wound margins just into contact, and the death of the tissue has ceased to come under my observation.

The other difficulty is overcome with increasing experience. Especially at the points where the thread has perhaps just completed one tier and is continued into the external skin, and commences the second tier, there is danger of injuring the

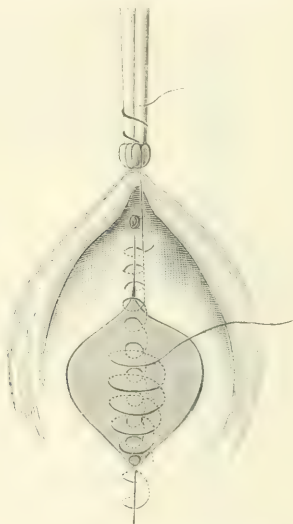


FIG. 4.—Second deep row of tier-suture.

thread in the first row. It requires only an ordinary degree of attention to prevent this accident. But if it has occurred, further mishap can easily be avoided by quickly fastening the torn end in the depth of the wound by a deep stiteh. To this end, it is not necessary to hunt for the broken thread; I put a suture underneath the place where the thread must be, by means of a deeply inserted needle, and knot the thread which is then continued in the running suture.

In all plastic operations, I endeavor to avoid moistening the

recent, forming cicatrix too early and too often. No vaginal irrigations are given; the external parts are rinsed after each urination with a weak carbolic solution. Schroeder has pointed out, in his communication, that it is very important to guard against any forcible stretching of these cicatrices, not only by feces, but also by flatus. This is certainly quite correct. For years I have been in the habit, immediately after every operation extending into the rectum, of inserting into the bowel a thin, soft-rubber canula, through which flatus is easily evacuated. Through the same canula, lukewarm oil is poured into the rectum on the fourth day, so that on the fifth or sixth day the fecal masses, propelled by the laxative given per os, pass the sphincter well lubricated.

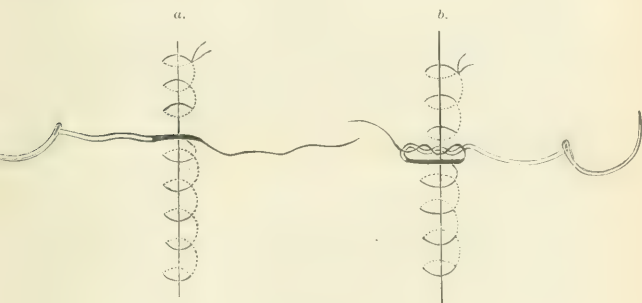


FIG. 5.—Final knot.

Another condition of success, in the running suture as in all plastic operations, is that the parts are left perfectly quiet until the cicatrices are consolidated; in other words, that the patient remains about three weeks in bed on an air cushion, with the knees tied together. The bladder and rectum may be evacuated on a low bed-pan, which is also used whenever the parts are washed.

In my present practice, I employ the *running catgut thread* in *plastic operations on the vagina, the perineum, and the rectum*. On the *uterus* I have used only *catgut button sutures*, on the *peritoneum* again the *uninterrupted suture* for small tears and defects, otherwise *button sutures of catgut or silk*.

According to these principles, I have performed, between September 29th, 1885, and June 17th, 1887 :

I. A number of *plastic operations on the external genitals and the perineum*. Among these were :

a. 21 perineoplasties ;

b. 8 rectoplasties ;

c. 58 prolapsus operations (anterior and posterior colporrhaphies according to my method).

Together 87 plastic operations with the uninterrupted catgut thread on the vagina and the perineum, besides an extirpation of a large cyst on the outer surface of the cervix, which extended into the vaginal fornix, and the bed of which was closed with the running catgut suture.

Ad a. As regards *perineoplasty*, I think it quite immaterial to lay down any particular method of freshening. In *recent cases*, the wound margins should be smoothed and united as they belong together anatomically. If possible, the parts should be united immediately after the occurrence of the laceration, the hemorrhage being arrested by the suture which is done under permanent irrigation with a weak lukewarm carbolic solution ($1\frac{1}{2}$ –2%).

In cicatrized cases likewise, it is not to be recommended to freshen any particular figure, but rather to remove all cicatricial tissue. By doing so, the form of freshening for each individual case will result spontaneously. According to my experience, the cicatrices extend usually more or less along the median line as far as the lower end of the rugous column, pass around the latter on either side or may separate a portion of it. After the cicatricial tissue has been cut away, I unite the vagina as far as the lower end of the column, according to the location of the cicatrix. From the lower end of the column upward, I always endeavor to arrange the suture so that a median raphe results.

After the freshened surface has been smoothed, the needle armed with a long catgut thread is inserted into the upper angle of the wound, the thread drawn out nearly as far as the end, and knotted three times. The short end is grasped by the assistant with the fingers or the ligature forceps and drawn moderately taut ; this secures the necessary tension in the tissue for the remainder of the suture. The needle is now inserted near the first thread, external to the wound margin, carried below through the entire raw surface, brought out above, and the

thread pulled until the wound margins just come together. The assistant with the other hand holds the thread, near the point where the needle comes out, only tight enough for the coaptation of the wound margins. Whenever the coaptation appears difficult, the tier suture is commenced in the manner described above. The size of the wound determines whether one or two tiers are required until the external wound margins are united.

The twenty-one perineoplasties recovered without reaction, smoothly and completely, so that a very perfect closure of the introitus vaginae was obtained.

Ad b. Among the *rectoplastics* there was no recent case; all were cicatrized. The extent of the rectal laceration measured from two to four centimetres. Usually the posterior vaginal wall projected as a large tumor above the spur of the recto-vaginal septum; in two instances this tumor inclosed an enormous rectocele. The rectal mucosa presented itself as a vivid red mass, and in several cases the cicatrization was very uneven, so that the border of the rectal mucosa ran an irregular course. The incontinence was always very annoying, especially in two cases in which the extent of the rupture was relatively small.

In all cases I removed any co-existing uterine complications at the beginning of the operation—abrasion of the mucosa, excision of erosions, as well as amputation of the hypertrophied lips. In two cases the uterus was cut out of the firm cicatrices in the vaginal fornix and the pelvic floor: these cicatrices on both sides were sutured according to the method given by me in the "Path. u. Therap. der Frauenkrankheiten," second edition, p. 349;¹ then the deep cervical lacerations were removed at the same sitting before the plastic operations on the rectum and perineum were undertaken. Next the cicatrix in the posterior vaginal wall was followed in all its ramifications. Five times the necessity arose for reducing first the opposite vaginal wall by an extensive anterior colporrhaphy. Here, too, the continuous catgut suture was employed.

In seven of the eight rectoplastics, the reconstruction of the recto-vaginal septum was inaugurated by freshening the lateral folds of the posterior vaginal wall and uniting them, as in my method of performing posterior colporrhaphy.

¹ Comp. also Czempin, Zeitschr. f. Geb. u. Gyn., xii.

In all cases, after freshening the spur in the septum, the mucous membrane of the vagina and rectum separated so far that this wound surface represented a multiple of the old cicatrix. In six cases in which the lateral folds had to be freshened, I did the freshening for the closure of the perineum after suturing the lateral folds, thereby avoiding prolonged hemorrhage and exposure of these surfaces.

I begin the suture by fastening the ends of the lateral-fold sutures *a* and *b* with a silk button stitch around the end of the

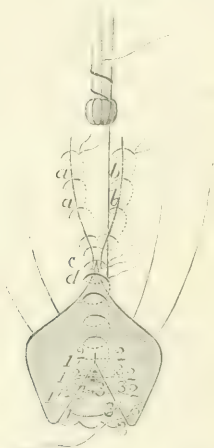


FIG. 6.—*aa, bb*, cicatrix of the lateral folds; *c*, silk closing suture; *d*, beginning of the continuous catgut suture; 1-1, 2-2, 3-3, suture tracks.

rugous column. The running catgut thread is laid alongside and in a few sweeps the wound surface towards the vagina is closed. Then the needle passes into the septum and with one or two or three stitches is carried close under the rectum. Now the needle is inserted in 1-1, the thread is drawn tight, in stitch 2-2 it unites the gaping wound surfaces, in 3-3 it again penetrates towards the rectum. The entire thread is drawn after it, suture tracks 1 and 3 come into contact. The needle is again inserted at 4-4, 5-5 is carried over in an analogous manner, 6-6 brought out, and so forth until the border of

the rectum, the anus, is formed. Now the needle goes back two or three stitches in the external skin for the formation of the perineum, so that now follows the depression of the wound surface over the rectal suture. Then the second tier is begun in the wound surface. As soon as the needle reaches the surface of the vaginal wall, the wound margins are here again united. If this coaptation can be effected readily, the external suture is at once commenced continuously. If the wound margins appear strained, a third or fourth tier is formed. Finally the thread is knotted in the manner above described. At all events, in this manner the septum becomes very broad; the height of the perineum is entirely optional with the operator, but I would advise not to make the introitus too narrow. I did not find it necessary to incise the sphincter ani. Either at once or in the evening of the same day, the above-mentioned rubber canula is inserted into the rectum. The patients receive for four or five days only liquid nourishment, then they are given an enema of oil, and on the fifth or sixth or day an ample dose of oil per os. Any straining during defecation is prohibited. If the evacuation takes place with great tenesmus, five to ten drops of tincture of opium are immediately given. The second alvine evacuation is to take place after two more days. The patients remain for twenty-one days quietly on their backs; when the defecation has been regulated, the nutrition is effected in a simple manner and a stool is secured every other day.

The patients are allowed to rise on the twenty-second day: on the twenty-fourth or twenty-fifth, the silk thread at the lower end of the rugous column is removed, and the patient is discharged whenever she has sufficiently recovered from the prolonged dorsal decubitus.

All the eight cases recovered completely without the formation of a fistula. Small cutaneous depressions in the course of the cicatrix soon filled up, and the rectum in all cases regained perfect continence.

Ad c. I performed the fifty-eight prolapsus operations according to the method devised by me. The uterus having been prepared as much as necessary, anterior and posterior colporrhaphy is done at the same sitting. As regards the latter, I must refer to the drawings contained in my book on the "*Pathol. u. Therap. der Frauenkrankheiten*," second ed., p. 149. In all these fifty-eight operations the continuous catgut

thread has been used, and the result with reference to cure has been uniformly satisfactory.

The above-mentioned case of extirpation of a large cervical cyst which I excised from the vaginal fornix, and whose bed was stitched with the running suture, could be properly included among the instances showing the application of this mode of suturing to the vagina. Here, too, recovery ensued without reaction.

II. Formerly I had repeatedly tried *catgut in suturing the uterus*. I have now become convinced that the unsatisfactory results, especially with reference to the arrest of hemorrhage and the perfect course of the healing process, are to be ascribed to the improper material. Therefore I have recently again tried the juniper catgut in uterine wounds.

a. In operations on the *cervix* with the use of the running catgut thread I have observed coalescence of the margins, although they do not permit of the accurate adaptation which was intended. I therefore employ catgut button sutures on the intravaginal cervix in excisions and amputations, as well as for Emmet's operation. The juniper catgut bears strong traction, and judging from the twenty-five cases which I have been able thus far to follow further, the arrest of hemorrhage appears to me sufficiently demonstrated. The healing process proceeds almost uniformly without irritation. It is an undoubted advantage that the sutures need not be subsequently removed. Nevertheless I do not use catgut invariably in these operations, mainly because the knotting of the threads requires a greater expenditure of force than with silk. The thread must be grasped more firmly, drawn tighter, and knotted triply. But this is not a serious matter; still, when the fingers have suffered by a number of operations, and the skin has been irritated by the disinfectants and become painful, I employ silk. I also add the silk suture wherever rigid wound margins oppose greater resistance to the accurate coaptation.

b. For the *uterine suture in abdominal operations* after laparotomy I formerly used plain catgut in a Cesarean section, in a supravaginal amputation, in the enucleation of a myoma from the wall of the uterus according to my method, and in the enucleation of a myoma from the broad ligament.

In the Cesarean section the threads had separated, the wound gaped, and the patient died of hemorrhage; and similarly in

the other operations the plain catgut had proved unsatisfactory. Of late, with the juniper catgut, I first employed the tier suture on the stump left after a supravaginal amputation. The suture was effected without difficulty; the patient recovered promptly. In two cases of enucleation of intramural myoma by laparotomy, I have closed the bed of the tumor throughout its whole extent with dropped sutures of juniper catgut. A hemorrhage after loosening the constriction caused me to stitch one of the suture tracks with a silk thread; in the other case the hemorrhage was stilled without requiring any additional help. One of these women convalesced without any disturbance. The other patient had been so exsanguinated by her myoma when I was called to her home to operate that, despite the entirely bloodless operation, I was unable to avert the collapse. In another case I had stitched the base of the left broad ligament, from which I had enucleated a large myoma, with three deep silk sutures, but united the wound margins with the running catgut thread. Here, too, the recovery was undisturbed. Finally, after excision of the pedicle of a calcified subperitoneal myoma I have closed the wedge-shaped uterine wound with the running catgut suture; no disturbance was noted during convalescence.

This experience, though still limited, encourages me to continue the use of juniper catgut also in analogous operations on the uterus after laparotomies, and to recommend its employment especially for dropped button sutures.

III. The habit of closing *lacerations and defects in the peritoneum*, both in its visceral and its parietal part, with the uninterrupted catgut thread has become so general that it will be sufficient for me to declare that I have also made extensive use of this mode of suturing, with the most satisfactory results.

In conclusion let me hope that these remarks may aid in gaining new friends for this simple method of suturing, and in causing a more general employment of catgut, in the form of the juniper preparation, for the button suture, but especially for the uninterrupted suture, in gynecological operations.

SOME POINTS IN RELATION TO PREMATURE CHILDREN.

BY

WM. H. TAYLOR, M.D.,

Prof. of Obstetrics, Miami Medical College; Obstetrician of the Cincinnati Hospital, etc.,
Cincinnati, Ohio.

ALTHOUGH the fact of premature birth is recognized by all writers on obstetrics, and the propriety of waiting to induce labor till the child is capable of independent life is insisted upon, yet an examination of many of the standard works on midwifery shows almost no suggestions as to the care of the child thus prematurely born. I deem the subject sufficiently important to direct your attention to some of the anatomical and physiological peculiarities of immature children, and to some morbid conditions consequent thereto.

There are numerous vitiating influences of ordinary life which predispose to premature birth, *e. g.*, laborious occupation of the pregnant woman; or, at the opposite end of the social scale, an enervating life, alcoholism, phthisis, and some of the acute diseases whose evil influence results from the elevated temperature accompanying them, or from the defective oxygenation of the blood, or consequent placental anemia, although in a recent contribution to the pathology of pregnancy, Klotz¹ asserts that in the exanthemata a specific eruption on the mucous membrane of the uterus, inducing an endometritis, is the cause of the interruption of the pregnancy.

The effect of constitutional debility of either parent in determining premature delivery is clearly shown by Priestly,² and, as all know, syphilis more than all else is the cause of too early birth.

Assuming that the child be retained to a viable age, the chances of its survival depend largely upon the character of the disease inducing its expulsion; *e. g.*, Runge³ asserts that the intensity of fever and carbonization of the blood in acute febrile diseases will determine between a dead and living premature

¹ Archiv für Gynäk., xxix., 3.² London Lancet, 1887.³ Volkmann, Vorträge, 174.

child; that is, a temperature may be sufficiently high and prolonged to interrupt gestation, but not to kill the fetus, and of course the effect of any influence which may disturb the normal pregnancy must be in proportion to its intensity; and an important fact influencing the fate of the child is that in premature birth the child is much more likely to present preternaturally, and it is well known that the dangers to the child are much greater than where the position is normal. Another proposition of much importance is that children vary in the degree of development at approximately the same age; admitting the difficulty of deciding the exact duration of a pregnancy, we have all been impressed with the difference in the size and weight of immature children.

There are certain conditions which are commonly regarded as indicating the age of the fetus. Thus a layer of subcutaneous fat is deposited during the last weeks, and the nails grow to the ends of the fingers by the end of intrauterine life.

The testicles usually descend during the eighth month of fetal life, but you will recall cases where they did not enter the scrotum till long after birth.

It therefore becomes necessary for us to establish some arbitrary criteria by which to determine whether or not a child is mature.

In the Moscow Foundling Asylum,¹ all children are regarded as immature which weigh less than 2,500 gm. and measure less than 45 cm. in length.

In an elaborate article upon this subject, Issmer (*Archiv für Gynäkol.*, XXX., 2) cites a large number of observers who nearly agree as to the normal weight and length of the mature new-born child, and he asserts that the *length* is a much more reliable and uniform standard than the weight.

The appearances of a premature child indicate its incomplete development; the subcutaneous layer of fat is imperfect; the skin, therefore, is wrinkled, the fine hair over the body is abundant, the nails do not reach the ends of the fingers, the muscular outlines are imperfect, the circulation is sluggish, and aëration badly performed; the color, therefore, is livid or yellowish. Several years since, Küstner² called attention to the fact that the presence of dilated hair-follicles caused by

¹ Th. Miller. *Jahrbuch für Kinderh.*, xxv., 3

² *Archiv für Gynäkol.*, xii., 102.

epidermal accumulation, producing at times a development of comedones on the nose, cheeks, and upper lip, were more abundant in premature than in fully developed children.

He says: "Of twenty-five children, evidently not mature, comedones were remarkably distinct on the nose, and almost always were numerous around the mouth and eyes—only one had few comedones and no milium. On the contrary, of sixty-five mature children, only two had milium to a decided degree, in a few they were scarcely perceptible, in the others not at all." And my own observation leads to much reliance on this condition as evidence of the degree of development.

Recognizing the premature child, a question of prime importance is as to its viability, which implies not merely being alive, but a capability of living. While no definite limit can be fixed, it may be asserted that there is no probability of life where the child weighs less than 1,000 gm., or measures less than 27 cm. in length, where the greatest circumference of the skull is not 25 cm., and that of the thorax at least 23 cm., or where the circumference of the chest is not decidedly more than half the length of the child.¹

Of course, exceptions to such rules occur. Tanner² says, "Jeffrey Hudson was only eighteen inches high at eight years of age . . . while Bebe, a seven months' child, was only between seven and eight inches long, and weighed a pound when born."

In estimating the probability of the survival of a premature child, we should not be too much influenced by the supposed duration of its intrauterine existence, but also take into consideration the degree of development, vigor, etc., which it displays. Montgomery³ cites two instances of children born before completion of six months' gestation who lived several months, and a number of cases where birth took place before seven months, in which the children had lived for years; and he quotes from Devergie cases of children born at full time who weighed but two and three pounds.

While every writer on obstetrics allows the probable fate of the child to influence his opinion as to the propriety of any

¹ Miller, loc. cit.

² "Signs and Diseases of Pregnancy," p. 218.

³ "On Pregnancy," p. 423.

operation by which pregnancy may be interrupted, it is remarkable how little attention is given to the child after its birth.

Tarnier,¹ however, does impress his readers with the importance of special care. He says: "All children born prematurely require the most special protection from cold; so that beside the usual clothing, the whole body—the head and limbs especially—should be enveloped in carded cotton, with hot bottles about it. The temperature of the room in which they are kept should be maintained at about 64° F. I decidedly object to this advice, "the usual clothing." Only the cotton should be used.

He says, "The temperature of the room in which they are kept should be maintained at 64° F." Certainly a very erroneous suggestion; when we bear in mind the temperature in which the fetus has lived, and its very limited calorific power, we should advocate a much higher temperature, from time to time the child ought to be exposed naked before a fire, and the entire body rubbed gently with the hand. The child should be laid on one side to obviate accumulation of mucus in the throat, from which, if it occurs, it should be removed by a camel's hair pencil or mop.

Hodge² says the child should not be fed with a spoon; now, from the weakness of the muscles of suction, the child is unable to draw milk from the breast and probably not from the bottle. I therefore believe spoon feeding to be the only proper method at first; the food given often and in small quantities, the mother's milk being the best nutrient.

Wiederhofer suggests pouring the milk through a tube passed by the nostril into the pharynx, as thereby the reflex movement of swallowing is more promptly excited. The child should be bathed only when absolutely necessary, and then by plunging it into warm water and immediately drying it with warm napkins; it should seldom be uncovered, as every movement or exposure brings it in contact with new cooler strata of air; because of the debility of the circulation it should not be allowed to lie long in one position, and to stimulate better respiration, efforts should often be made to induce fuller inspiratory movements by tickling the feet, by careful inhalation of cologne water, weak ammonia, etc.

¹ Cazeaux and Tarnier, "Obstetrics," ii., 1,022.

² "Sys. Obstetrics," p. 13.

The practice which I advocate in all cases, of not ligating the umbilical cord until all pulsation has ceased, is especially important in premature or feeble children.

The imperfect development of all the organs, necessarily implied by premature birth, contributes in various ways to peculiar morbid processes.

The small weight of the body compared with the area of cutaneous surface, and the absence of subcutaneous fat, makes the radiation of heat relatively much more rapid than in well-developed children, and on the other hand the production of animal heat is defective because of the imperfect respiration and circulation. From these defects arises an important clinical fact, viz., that serious morbid processes may occur without the usual elevation of temperature:¹ thus pneumonia may exist without fever, and, as shown by Soltman,² the reflexes are so defective in the new-born that no cough may accompany the pneumonia. From the absence of these two important symptoms, it may be very difficult to distinguish pneumonia from atelectasis, and from the feeble circulation hypostatic accumulations of blood are likely to occur, unless, as is often the case, the foramen ovale remains open, allowing blood to pass from the right to the left auricle. Atelectasis is especially favored by the feeble conditions of premature children: naturally the muscles are more feeble than in fully developed children; those of respiration, therefore, are incapable of expanding the thorax, inspiration is imperfect, and parts of the lung retain their fetal state. Of course, imperfect respiration implies defective oxygenation of the blood, which reduces the animal heat and further impairs the already limited vital powers. The original atelectasis is likely to be supplemented by acquired collapse of the lung, because of the bronchial catarrh which is likely to accompany these conditions. Kjellberg advises placing the child in a warm, moist atmosphere—a suggestion I believe of practical value, not alone for the reason given.

In consequence of the limited vitality of the immature child, it bears deprivation of food better than when mature, and it must be borne in mind when feeding them that they

¹ Th. Miller. loc. cit.

² Jahrbuch Kinderh., xi., 1.

³ Kjellberg. Jahrbuch Kinderh., vi., 1.

take much less food, 3 ij.-3 iv. being all that they bear at once. The digestive processes are defective; the food, therefore, is likely to be imperfectly digested and to excite enteritis, or from the feeble muscular power of the intestines constipation may exist. Of course, predigestion of the food suggests itself as an important preventive of the evils mentioned.

In the kidneys, uric acid infarcts occur because of the defective circulatory and respiratory processes; they may lead to suppression of urine, renal colic, or organic disease of the kidneys, and as the excretory glands of the skin are not developed until late in intrauterine life, they may be incapable of eliminating the elements of urine from the blood, and uremia will then result. The various changes in the skin subsequent to birth are much slower in their progress; therefore, desquamation and shedding of the fine hair continue longer, and because of the feeble circulation sclerema often occurs. The investigations of Laugerts (quoted by Miller) have shown that the subcutaneous fat of infants contains a large proportion of palmitic acid, 31%, while that of adults contains but 10%, and that a slight fall of temperature causes the acid to solidify and thereby sclerema occurs.

Icteric color of the skin is almost universal in premature children, and continues longer than in mature infants;¹ the greater frequency of this icterus is explained by Birch-Hirschfeld by the feeble circulation and the defective action of the right heart, in consequence of which venous congestion of the liver occurs, resulting in swelling of that organ and compression of the gall-ducts. The toxic effect of retention of biliary elements in the blood is fully recognized, and destruction of blood-corpuscles, with the consequent impaired nutrition of the muscular and nervous tissues, and depression of temperature, may be due to this cause.

The separation of the umbilical cord takes place much later in unripe children, sometimes being delayed for two weeks, and even then the stump may contain fluid having septic qualities; the blood is deficient in fibrin and consequently forms thrombi less perfectly, so that bleeding from the stump occurs more readily, or the loosely formed clot more readily undergoes decomposition and causes septic processes.

The nervous system of such children is very imperfect,

¹ Epstein, Volkmann, *Vorträge*, 180.

and reflex actions are with difficulty awakened; the cerebrum is very soft; gray and white substances are scarcely distinguishable, and the convolutions and sulci are but slightly marked.

The usual decrease of weight after birth is exaggerated in the premature, and the commencement of increase is much later than normal.

UTILIZATION OF THE OUTGOING AIR IN THE REPLACEMENT
OF THE UTERUS BY THE KNEE-CHEST POSITION.

BY

ELIZA' M. MOSHER, M.D.,

Brooklyn, N. Y.

EVERY gynecologist has doubtless realized limitations to replacement of the uterus by the knee-chest position, and with myself has believed that more ought to be accomplished by such a powerful force than has heretofore been done.

Not long since, while I was endeavoring to return a retroverted uterus to its place by this method, I did not remove my hand during the change of position to the dorsal decubitus, but by my finger steadied the cervix back into its place against the sacrum. To my astonishment I felt the fundus jump up into position, if I may be allowed the expression, as the air rushed out. It was the more remarkable to me, because in this case, up to this time, I had never been able to replace the uterus perfectly except by use of the uterine sound.

I tried the same manipulation again and again in other patients, sometimes succeeding at the first attempt, and again not succeeding at all. Finally I discovered that when my hand acted as a stopper to the vagina, retaining the air until the patient was on her back, and then (my finger still against the cervix uteri) the air was allowed to *flush out*, I succeeded in making replacement if there were no adhesions. In some cases I found that I succeeded best in allowing the air to pass out with the patient in the half-sitting posture, utilizing the force of gravity as well as the pressure of superincumbent viscera.

The ordinary method of replacement by means of the knee-

chest position permits the air, which inflates the vagina and elevates the vaginal roof, to pass out more or less slowly as the patient changes the position. No force is exerted thereby, or if it were, there is wanting the directing finger of the operator to guide the uterus into place, thus it is evident that a powerful force is wasted, and in a large number of cases replacement is not accomplished.

Where a rupture of the perineum has occurred, or where the introitus vaginae is very large and lax, it is difficult to control the exit of air, but in all cases where it can be retained until it has undergone some degree of compression, or, at least, until the force from behind is sufficient to send it out with energy, it will carry with it into place the body of the uterus, *provided the organ be guided by the finger in the desired direction.*

I have succeeded in a small number of cases in restoring a strongly anteverted uterus in the same way. A good deal of force can be brought to bear by this method upon flexed uteri, but I do not anticipate very decidedly favorable results in these cases. I have looked up the literature on the subject of atmospheric pressure as an aid to the replacement of the uterus, but have failed to find any mention of its utilization in this way, and I therefore take pleasure in recommending it to the profession.

PERINEAL AND OVARIOTOMY CUSHIONS.

BY

HOWARD A. KELLY, M.D.,

Philadelphia.

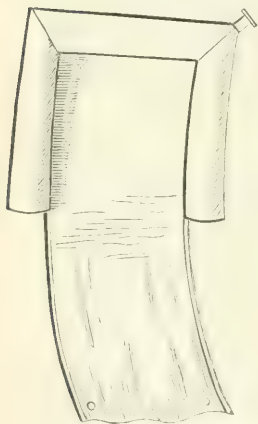
It has been my habit within the past year to use much water, both pure and in the form of solutions, at all of my gynecological operations. But with the manifest advantages accruing from this practice, I have found the minor disadvantage of wetting many sheets, cloths, and sometimes, even in a perineal operation, the clothes of the patient as high as the neck.

With patients of a better class who, from instincts of refinement, prepare their underclothing and night dress often with elaborate care, the accident is very annoying.

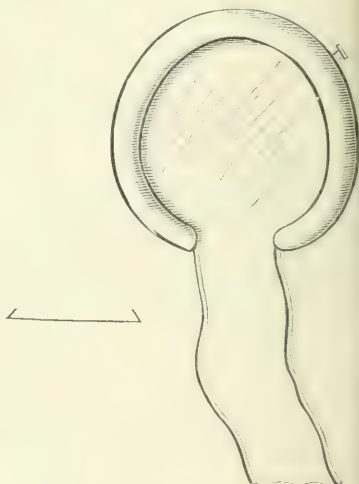
1030 KELLY: *Perineal and Ovariectomy Cushions.*

It is still more annoying after a tedious operation, abdominal or vaginal, to be obliged to keep the patient on the table enough longer to be completely disrobed and dressed again, with the attendant disadvantage of the amount of gymnastic exercise this performance requires under the circumstances.

It will be said that a properly constructed operating table will prevent this by draining in the requisite direction. Such, however, is not in practice the case. With myself the trouble



Perineal cushion.



Ovariectomy cushion.

is an old one in my private clinic, more particularly annoying when I am called upon to operate at the patient's home.

In my present trip through Germany, visiting the various gynecological clinics, I see the same difficulty very manifest everywhere, even on the best constructed special tables. Patients are sometimes lifted up soaking in their own blood and the washings. I have found, however, a perfect remedy for this annoyance, and one which, while it adds something to our already large armamentarium, yet compensates for itself in many ways, saving the linen from wetting, allowing the utmost

freedom in the use of water, and doing away with all kinds of precautions to prevent wetting clothes and carpets, etc. The sketches show two cushions made of soft sheet rubber, both opened on one side to drain. It is hardly necessary to describe so simple a device further than to give a few measurements.

The *perineal cushion* is three sided rectangular, measuring twelve inches across by ten in length, exclusive of the apron. The inflatable rim is three inches wide. The apron is eighteen inches long, with a rim turned over at a sharp angle as shown on cross section. It also has a hole at each lower corner through which a string can be passed and a funnel made out of the lower part.

To use this cushion, the patient must be placed in position, the clothes raised well above the buttocks, and the rim well inflated, when by carrying the patient's heels together well up over the head, the buttocks are thrown up off the table, and the cushion slipped under, adjusted so that the whole apron falls vertically from the edge of the table to the bucket or tub. The usefulness of the pad is at once evident, particularly if continuous irrigation be practised. After operation the heels are again carried up, the buttocks thus raised and well dried with a towel, and the cushion pulled out and dropped in the tub, when the patient will be at once ready for the bed.

The ovariectomy cushion is larger and has a small, round, inflatable rim, with a somewhat longer, narrower apron. The cushion is twenty inches in diameter, the rim but two inches, and the apron twenty-two inches long by six broad.

With these cushions any amount of water can be used on the wound without caring where it is going; sponges containing too much fluid can be squeezed close to the field of operation. It is not necessary to pack old linen under the parts for protection or to hunt up old carpets or oilcloth to protect the carpet.

They can be flattened out and rolled up and carried readily in a satchel.

Since using these, I have more than saved the expense in old linen and washing sheets after operations every month.

The two which I have were made to order by Mr. Levick, of 727 Chestnut street, and cost about \$2.50 and \$3.50 respectively. Measurements can be readily varied, as can also the shapes of these drain-pads.

PERITONITIS AS A METASTASIS OF ACUTE ARTICULAR RHEUMATISM DURING THE PUERPERAL STATE.

BY

JOHN ALSDORF, M.D.,
New York.

CASE.—Mrs. B——, 40 years of age, married, was delivered, on August 31st, of a healthy child. The labor was perfectly normal, and the patient was slowly convalescing, when, on September 2d, three days after the confinement, rheumatism commenced in the joint of the left knee, attended by the ordinary symptoms of acute forms of this inflammation. The right knee, then the left elbow, followed by the elbow and wrist of the right arm, were successively attacked by the disease. For a period of ten days the inflammation continued with no indications of puerperal complications. The lochia remained normal both in quantity and quality; the abdomen free from pain or tenderness on pressure; and tympanites absent.

On September 11th, twelve days after the confinement, the following symptoms were noted: diffused abdominal pain and tenderness, increased by movement; vomiting; tympanites; thoracic respiration only; and a very rapid, feeble pulse (140). The above symptoms, in connection with the distention of the abdomen, and the characteristic posture of the patient (lying on the back, with the thighs and knees flexed, and the legs drawn up), left no doubt as to the diagnosis, and that the case had developed a well-marked peritonitis.

That peritonitis may originate as a complication of acute articular rheumatism has been suggested by various authors, but always couched in language implying that it is of extremely rare occurrence. Why it should be so I am not prepared to say. Certainly there is no difference either in the anatomical structure or physiological properties of the serous membrane of the skull, chest, or abdomen; and yet endocarditis, pericarditis, and meningitis are mentioned as *frequent* complications. Dr. Henry Hartshorne, in his "Essentials of the Principles and Practice of Medicine," says: "The *danger* in rheumatic fever consists chiefly in the *liability* to endocarditis and pericarditis."

On the contrary, Dr. Frederick T. Roberts, in Quain's "Dictionary of Medicine," after enumerating the various complications from which peritonitis may originate, ends with—and *perhaps* acute rheumatism and gout. Dr. J. Mitchell Bruce, in the same work says: "A fatal termination in acute

rheumatism is always the result of some complication, intercurrent disease, or injury. Of these the most frequent are congestion or inflammation of the lungs, and inflammation of the heart and pericardium. Inflammation of the pleura is much less commonly found; and *in rarer instances* inflammation of the peritoneum." Dr. Alfred Baring Garrod in Reynolds' "System of Medicine" also says: "*More rarely* the peritoneum becomes affected by rheumatic inflammation;" while in the same work Dr. John Richard Wardel states that "*sometimes* peritonitis is metastatic of rheumatism."

In considering the above case then, the question arises, was there a metastasis or was the peritonitis due to some puerperal cause, septicemia, etc.? In order to settle this question in my own mind, I called in consultation Dr. John L. Campbell, of 259 West 42d street, and Dr. Martin Burke, of 147 Lexington avenue, both of whom, after a careful examination and consideration of the case, coincided with me in the opinion that the peritonitis, although possibly aggravated by the puerperal condition and consequent impoverishment of the blood, was not a complication of the same, but was a true metastasis of acute articular rheumatism: and, from its extreme rarity, should be reported.

237 WEST 51ST ST., NEW YORK, Sept. 14th, 1887.

A TENTH HORN-CESAREAN CASE, WITH RECOVERY OF THE WOMAN: THE SUBJECT BEING A PAWNEE INDIAN SQUAW, AND THE ANIMAL INFLICTING THE INJURY, AN AMERICAN BISON BULL.

BY
ROBERT P. HARRIS, M.D.,
Philadelphia.

UNDER the title of "Cattle-horn laceration of the abdomen and uterus in pregnant women," I presented in the July number of this JOURNAL nine cases of horn Cesarean rip effected by the attacks of the bull, ox, cow, and Indian buffalo on women far advanced in the pregnant state, with the saving of five women and four children. Of the five children lost, one was premature (in the sixth month); another scarcely breathed, being injured on the neck and shoulder; a third was killed by a contusion of the chest; the fourth was extruded dead through the

uterine rent; and the fifth died in eight hours. The publication of these records has brought to light a tenth case, through the kindness of Dr. George E. Powell, of La Crosse, Wisconsin, who, when a boy, was witness to the injury, while on a "Buffalo hunt" with the Pawnee Indians in Nebraska.¹ The case is one of unusual interest, because the injury was inflicted by a bison, and was treated by the Indians in their peculiar way with success.

The American bison, erroneously called a buffalo, the true American buffalo being an extinct animal, has short, black horns of a hooked form, which, in some individual specimens, are very smooth and sharp. The animal has a large head, a very powerful neck, and carries his main strength in the anterior part of his body, which is out of all proportion to the lighter build of his hind quarters. The male animal is very ferocious under attack, and does not scruple to use a horn when an opportunity offers, a horse or a man being usually the object of attack during a hunt; but the women, being far to the rear, are rarely in any danger. When a herd is attacked by a large party of Indians, the animals are usually driven across the prairie almost in a direct line, and the work of their destruction goes on as they are chased in advance; so that a look backward displays a vanishing black line of dead animals. Following up this line of game, are the squaws, old people, and children of the camp; the work of skinning the bisons, preparing their flesh for future use, and dressing the hides for sale or for home use as robes, being all done by women. To turn and drive the herd back upon its own track is very rarely done, and for obvious reasons of safety; and when it has occurred, it has been due to the careless and reckless impetuosity of the *young braves*, who have more dash and fight in them than discretion. This turning of the herd backward took place on one occasion when Dr. Powell, as a boy, was present; and he witnessed the goring of the abdomen of a squaw, who was far advanced in pregnancy, by a bison bull, who tore out the fetus and carried it upon his horn, rather than tossed it, a distance of about twenty or more yards. The child was killed by the horn thrust, but the woman narrowly escaped death. This squaw was

¹ In what is now Franklin County, just east of the union of Frenchman's Creek with the Republican river, and forty miles south of Fort Kearney. Franklin is one of the south border Counties and nearly Central in the line.

about 30 years old, of medium height, not fat, but broad, and strongly built, with all the evidences of perfect health. Such women have been known to recover from injuries of an extremity which, in a civil state of society, would require amputation even to save life. As nearly as Dr. Powell can now recollect through mental association, this calamity happened in the year 1852. The woman made a good recovery under Indian treatment, and was seen alive and well at a later period by *young* Powell. What the management of her case was he only knows inferentially from his experiences among the Indian tribes after he had reached mature years.

According to the later experience of Dr. Powell, who has seen abdominal lacerations in men made by the bison, as well as wounds of the same region received under hand-to-hand encounters in battle, treated by the Indians, the process is as follows: A plastic clay is selected, such as may in emergency be dug up from beneath a "buffalo wallow," and made into a stiff mud with water; the wound is held together, while a thick coating is applied; then over this is placed a layer of woody fibre crossed upon it in every direction; then another coat of mud, and so on, until a cake of two inches thick covers the abdomen from flank to flank, the patient being kept upon his back during the treatment. The Pawnees, Utes, Apaches, Sioux, and Comanches make use of silky fibres obtained from plants for holding the clay together. The sage-brush, so common in Indian regions, furnishes one source of supply; another is a species of evergreen, unknown by name to Dr. Powell, which grows high up in the snowy range of the mountains. In extraordinary years, the fall of snow reaches from 20 to 40 feet in depth, covering the trees. The snow partially melts, then freezes, and finally sinks in the warm season, stripping down the bark to the roots, and tearing out the inner bark into long thin strips, which are gathered by the Indians for use in dressing wounds. Choice clays are also stored up and kept for the same purpose.

In 1865, Dr. Powell accompanied a U. S. expedition, with Omahas and Pawnees, across the plains, and encountered Black Bear and his band of Arrapahoes, on Tongue river, now in Montana. In hand to hand fights, three young braves in their teens had their abdomens cut open, and in two, the intestines protruded, as Dr. Powell can bear witness; whether in the

third case the peritoneal cavity was opened he cannot say. These youths were treated by their companions in the way already described, and two of them recovered. Thus it will be seen that the dirt treatment in surgery is much older than that of Hewson; as the expression of the placenta has been demonstrated by Engelmann to have long preceded the time of Crédé in its use among our Indian tribes.

Of 13 horn-rips in pregnant women, 10 opened the uterus, and 3 did not. Of the 10 women, 6 were saved, and 4 of the 9 matured children; the 3 cases of the second class all recovered, did not miscarry, and bore living children at maturity. Those who claim that the Cesarean operation is one of the most fatal in surgery, should weigh these facts, determine how much of the risk is due to the condition of the subject at the time the knife is reluctantly used, and how much to the operation itself. Germany has demonstrated the latter pretty conclusively within the last five years. It may be claimed that the horn-ripped women were in the best possible physical condition at the time of the casualty. True; but can this outweigh the difference of shock produced by the sudden horn-thrust, and the carefully used knife under anesthetic unconsciousness, respectively? Test the work of the knife upon the rachitic woman in the commencement of labor, as has been done in Leipzig and Dresden, and note the diminished rate of death under the Säger method. Then compare this with the fatal results under the same method in the United States, when resorted to after physical exhaustion, and we can understand what must be the *sine qua non* if we are to secure future success, as in the exceptional Lusk case at Bellevue Hospital, New York.

329 S. TWELFTH STREET, PHILADELPHIA.

August, 1887.

CORRESPONDENCE.

AN ADDITIONAL CASE OF CATTLE-HORN LACERATION OF THE PREGNANT UTERUS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

CITY OF MEXICO, August 15th, 1887.

DEAR SIR:—In the July number (1887) of the AM. JOURN. OF OBSTET., etc., I find a very interesting article on "Cattle-horn

Lacerations of the Abdomen and Uterus in Pregnant Women," by Dr. Robt. P. Harris, of Philadelphia.

It would appear, from the author's conclusions, that it is a great deal safer to have a pregnant woman's womb opened by a bovine horn than by the surgeon's knife, even when every care is taken to surround the patient by all the precautions that art and science are able to furnish in such cases. It may be useful to remember that all the women quoted in the article were strong and healthy individuals, no contraction of pelvis, no rachitis, no osteo-malacia, and that the operations were not performed in hospital wards or in crowded places. In former years, the rare happy results on record of the Cesarean operation almost all occurred in cases in the country, where nearly no assistance and no help could be secured, but where at least there was no chance of septic infection.

This, however, is not the object of my writing.

What I have to communicate to you are two cases that took place in this city, and which seem to me worthy of being recorded.

I.—*Cattle-horn laceration of the abdomen and uterus in a pregnant woman.*

("Breves apuntes sobre la Obstetricia en Mexico," Tesis sostenida por Juan Maria Rodriguez, Mexico, 1869.)

On June 27th, of 1850, Dr. Miguel Jimenez, later professor of clinical medicine and a very clever physician and teacher, now deceased, on leaving the hospital of San Pablo, after finishing his morning visit, was informed that on a little square next to the hospital a woman had been gored by a cow. He repaired immediately to the place and met in a small room down-stairs a woman (named Jacinta Guzman) with a lacerated wound in the left side of the abdomen, eight inches long, running towards the navel. The woman was pregnant more than eight months, and through the wound a portion of the fetus presented itself, which Dr. Jimenez believed to be a buttock. He dilated the wound a little in a downward direction, and was able to hook his left index finger in the left groin of the fetus and to extract the corresponding leg, then the right leg, and finally the whole child, which immediately began to shriek. The womb contracted at once, and so quickly that Dr. J. was unable to deliver the afterbirth. He confined himself to cut and tie the umbilical cord as low down to the womb as he could, to replace it into the rent, and to sew the abdominal wound; he then applied a bandage to the abdomen

and bled the patient, who was young and strong, and enjoined her quietness and diet.

Six hours later, the afterbirth was expelled with the tied cord, under labor pains and *per vias naturales*, and a violent peritonitis set in that carried the patient to the edge of the grave. But twenty days later she began to recover, and in 1875 the woman and the child (a male) were still alive and in good health. The woman had a ventral hernia at the place of the wound.

In the pamphlet which will next occupy my attention, two cases of the same kind are mentioned, one recorded by Desault, taken from G. J. Witkowsky, "*La génération humaine*," Paris, 1881, pp. 312 and 313, of a woman in San Sebastian, Spain, wounded during a bull-fight, when the amphitheatre broke down; it is probably Case III. of Dr. Harris' compilation; and the case of one "*Frenaye*," taken from "*Traité nouveau de l'hystérotomotomie ou enfantement césarien*, etc.," Paris, 1581, and which seems not to be comprised in Dr. Harris' list.

It may not be altogether without interest to your readers to record that there exists a poem, "*La Luciniade*," the author of which, as well as other particulars, we have not been able to ascertain, which refers to the San Sebastian case (Parish of Zecoytia, province of Guypuzcoa, Spain), No. III. of Dr. Harris, in the following terms:

(Le taureau)

"Perce ses vêtements, fend son ventre et son sein;
Le fœtus sort vivant, sans franchir le bassin,
Et sa mère . . . ô prodige! après cette aventure
N'eut besoin que de vin et d'un point de suture."¹

II.—*Operacion cesarea y amputacion utero-ovárica (Porro) por el Dr. Juan Maria Rodriguez, México, 1884.*

The first instance of Cesarean operation performed in Mexico on a living woman on the 12th of March, 1884, followed by Porro's operation. The woman was a dwarf, rickety, and a deaf-mute, admitted into the maternity hospital at eight and one-half months of pregnancy, with beginning labor and a generally and absolutely contracted pelvis. Cesarean section was performed and followed by the Porro-Müller operation (ablation of the womb). The woman died twenty-eight hours after, probably from shock; the child lived and was turned over to the founding's asylum a fortnight after its mother's death.

F. SEMELEDER, M.D.

¹ Who of your readers can tell us more about this poem?

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

(A B S T R A C T.)

TWELFTH ANNUAL MEETING.

HELD IN NEW YORK, SEPTEMBER 13TH, 14TH, AND 15TH, 1887.

First Day—Morning Session.

The Society met in the Hall of the New York Academy of Medicine, and was called to order at 10 o'clock by the President, DR. ALEXANDER J. C. SKENE, of Brooklyn, N. Y.

THE ADDRESS OF WELCOME

was delivered by FORDYCE BARKER, M.D., LL.D., of New York, who briefly reviewed the excellent work done by the Society, and extended a warm fraternal greeting, especially to the foreign guests.

INVITED GUESTS.

Dr. Graily Hewitt and Dr. George Granville Bantock, of London, England; Dr. August Martin, of Berlin, Germany; Dr. A. Cordes, of Geneva, Switzerland; Dr. A. R. Simpson and Dr. Frome, of Edinburgh, Scotland; Dr. Georges Apostoli, of Paris, France; Dr. G. H. Kidd, of Dublin, Ireland; Dr. Lloyd Roberts, of Manchester, England; Dr. William L. Reid, of Liverpool, England; Dr. J. Milne Chadbourne, of Inverness, Scotland; Dr. J. Amédé Doléris, of Paris, France; Dr. Thomas M. Dolan, of Halifax; Dr. Nelson C. Dobson and Dr. Aust-Lawrence, of Bristol, England; Dr. W. Balls-Headley, of Melbourne, Australia; Dr. Walter Brown, of Belfast, Ireland; Dr. J. A. S. Grant (Bey), Cairo, Egypt; Prof. Terrier, of Paris, France; Dr. G. Bernard, Dr. John Gould, Dr. John Sivins and Dr. Boyd Jole, of England; Dr. Valentine Knaggs, of London, England; Dr. J. Comeys Leach, Dr. Foster McGeah, Dr. Thomas Logan, Dr. Fred. Morgan, Dr. Parkinson and Dr. Wiseman, of England; Dr. R. Singleton Smith, of Bristol, England; Dr. Banajee, of Bombay; Dr. Henry Hewitt and Dr. Lincoln McPhatter, of Guelph, Ontario; Dr. M. Ogden, of Toronto; Dr. William Gardner, of Montreal; Dr. J. Algeron Temple, of Toronto; Dr. E. Landolt, of Paris, France; Dr. Duncan C. MacOallum, of Montreal; Dr. J. H. Davenport and Dr. G. W. Porter, of Providence, R. I.; Dr. Moseley, of Baltimore; Dr. William J. Aiken and Dr. James H. Stowell, of Chicago; Dr. W. W. Potter, of Buffalo; Dr. W. W. Seymour and Dr. Z. Rousseau, of Troy; Dr. Beebe, of Minnesota; Dr. A. Vanderveer, of Albany; Dr. Augustus C. Bernays, of St. Louis; Dr. Wm.

H. Haggard and Dr. W. A. Atchinson, of Nashville, Tenn.; Dr. A. S. Hunter, of New York; Dr. John Chambers and Dr. Harvey, of Indianapolis; Dr. B. C. Hirsh, Dr. Robert P. Harris, Dr. Howard N. Kelly, and Dr. Longaker, of Philadelphia; Dr. Ed. Mitchell, of Cincinnati; Dr. X. O. Minder, of Pittsburgh; Dr. D. A. K. Steele, of Chicago; Dr. Richard J. Thompson, of Fall River, Mass.; Dr. F. A. Flandreau, of Rome, N. Y.; Dr. E. W. Cushing, of Boston; Dr. N. S. Davis, of Chicago; Dr. Barnes and Dr. W. C. Cook, of Nashville; Dr. J. H. Raymond, of Brooklyn; Dr. A. B. Palmer, of Ann Arbor, Michigan; Dr. Robert L. Dickinson and Dr. Benton Butler, and all the members of the New York Obstetrical Society.

The first paper was read by Dr. THOMAS ADDIS EMMET, of New York, entitled

A STUDY OF THE CAUSES AND TREATMENT OF UTERINE DISPLACEMENTS.

Experience has taught the author of the paper that it is the degree of prolapse below, or of elevation of the uterus above a certain plane, that causes the symptoms now usually attributed to version alone. That plane he has named as "the health-line," and it varies in different persons. While, however, the uterus occupies this plane, this health-line, its circulation continues normal, the veins empty themselves, and over distention does not take place. Many years ago he learned and had taught since, that a retroversion pessary, having a somewhat longer posterior curve than is generally used, is the most reliable means for relieving the symptoms of anteversion of the uterus, provided, the displacement had not been caused by inflammation and shortening of the utero-sacral ligaments. This application of the instrument has the effect of increasing the degree of version, although such is not the object, but the purpose is simply to lift the cervix, with more or less of the body, and without reference to the axis of the organ.

In this paper Dr. Emmet directed attention especially to pelvic inflammations as a cause of displacements, believing that this large class of cases had not received the attention its importance required. The only fixed and unyielding point with pelvic tissues is at the neck of the bladder, where the sub-pubic ligament binds down the urethra. When traction from any cause is made in line with this point, irritation, or a desire to empty the bladder, as a symptom is excited. This traction is one of the consequences of a pelvic inflammation where opposing peritoneal surfaces have become adherent. From the same cause the uterus may be extremely anteverted or retroverted. A prolapse is the more usual, in consequence of the increased weight of the uterus from obstructed circulation of the blood through the connective tissue. This tissue is, as a rule, first involved in a pelvic inflammation, and

the degree of displacement is generally in proportion to the extent of the previous cellulitis.

The uterus may be either drawn up in the pelvis or prolapsed, from an inflammation which has been confined chiefly to the peritoneum, and the result is likewise influenced by the position and extent of the inflammation; but a version, which is not the direct result of a mechanical cause, and due either to some injury or to new-growths, is always the consequence of a pelvic peritonitis.

After alluding to the fact that inflamed cellular or connective tissue does not rapidly, if ever, regain its integrity, and directing attention to the effects produced upon the uterus by inflammation of this tissue in different parts of the pelvis, and the obstacles to be overcome in the treatment of the different displacements of this organ, he gave an account of the peculiar features of the pelvic circulation of the female.

As soon as a woman suffers from prolapse sufficient to straighten the convoluted course of the veins, they dilate rapidly and become the receptacles of almost stagnant blood. The connective tissue is as the trellis work to the grape vine, and the pelvic fascia gives support to the whole. So long as the fascia and connective tissue are in a state of integrity, not only will the proper support be given to the pelvic organs, but the circulation of blood will be kept under control by the elastic pressure and support of the connective tissue itself. The most serious result of rupture of the perineum is lost or impaired support to all the pelvic vessels, and no benefit is gained by any surgical procedure that does not restore the proper support to the blood-vessels.

Dr. Emmet then considered briefly what was to be accomplished by the successful use of a pessary. Many an operator has fitted a pessary which may do no harm, but which does no good. The success in the use of the instrument depends entirely on only just disposing of the over-stretch while it relieves the prolapse. In that way the needed support to the connective tissue will be restored, and it is only when this has been accomplished that the pelvic circulation can be kept within its proper limits and the patients be relieved. If a uterus, free from peritoneal adhesion, be replaced and a sufficient support to the fascia be again brought into play, it will then be retained in position through the aid of the natural elasticity of the surrounding tissues. For years he had employed a few pieces of cotton, saturated with glycerin, placed as a crutch to lift the uterus, and thus relieve tension along some line shortened by inflammation. But he had never used more than was necessary to correct the degree of prolapse, and this was sufficient to take in the slack and obtain the necessary support to the vessels. This mode of treatment has been recently advocated, but without a full recognition of the principle upon which it acts.

Lest his views should hereafter be misrepresented, he wished to state distinctly that he believes nothing can take the place of a pessary when properly fitted and when used in the proper class of cases.

DR. GRAILY HEWITT, of London, said that it gave him great pleasure to meet face to face so many with whom he had been acquainted in spirit for so long a time. In accordance with the wish of the President that he would make a few remarks on the learned paper by his friend Dr. Emmet, he could only say that he had done the best he could to arrive at the same generalization on the subject. From what he had been able to gather from Dr. Emmet's writings, and those of other gentlemen on this side of the Atlantic, it had appeared to him that the constitution of the women in America and England might be different, especially with regard to the frequency with which pelvic cellulitis is supposed to be present in cases of uterine displacement. He could not say how it might be here, but in his own practice he was not familiar with a large number of cases in which this complication was found to be present; or, supposing it to be present, he had not detected it. He had attributed the sufferings of the patients to something else. He believes it to be a general conclusion, reached by others besides himself, that there is a greater tendency and frequency of occurrence of pelvic inflammatory mischief in America than in England. He believed that the general causes of uterine displacement was one of the most important subjects which could be brought to the notice of the Society; for we have not only to cure, but to prevent the disease, and in the question of prevention we have to see to the general good nutrition of the whole body.

With regard to the suffering of the patient, Dr. Emmet had attributed it chiefly to impeded circulation; Dr. Hewitt attributed it to pressure on the nerves of the uterus itself. Dr. Emmet says that the suffering is removed by lifting the uterus, and no doubt this elevating the organ is effectual, but the question is, how does it bring relief? Dr. Hewitt thinks that a great deal of the suffering in these cases is due to compression which the uterine tissues undergo in consequence of the presence of flexion, and it is very certain that the mere straightening of the uterus will afford relief, because of the relief afforded to the nerves of the uterus itself.

DR. A. R. SIMPSON, of Edinburgh, had listened with very great pleasure to the observations which had been made regarding uterine displacements, and he thought it would be quite evident to the young men just coming in contact with these cases that there are two distinct camps, trying to do what they can to relieve these patients, and that they are represented by the two eminent speakers by whom he had been preceded. To the view expressed by Dr. Hewitt, his distinguished countrymen, that there is a constitutional tendency to pelvic inflammatory troubles in American women that does not exist in women in his own country, he must take exception. He believed that there was a great deal of human nature on both sides of the water as to the detection and management of uterine troubles, and he had a strong impression that very much depended upon the mental condition of the examiner before whom the patient was brought.

He thought that the pessary was not to be abandoned altogether,

for there was a large group of cases in which pelvic inflammation had either not been present or had been relieved, and in which, when the displacement had been gradually overcome, the symptoms are relieved and conception takes place. At the same time, he must acknowledge the important service rendered to gynecology by Dr. Emmet in reducing the inflammatory processes in the pelvis and the use of hot-water vaginal injections.

DR. HEWITT begged to disclaim having expressed any opinion as to the constitutional condition of the women as bearing upon the question of the occurrence of cellulitis in America and England. He simply alluded to that as a possible explanation of what occurred in his practice.

DR. GRANVILLE BANTOCK, of London, had listened with the greatest interest to Dr. Emmet's paper, and he was sorry to say that he was unable to agree with him on the occurrence of pelvic cellulitis and peritonitis. He doubted very much whether there was any peculiar constitutional condition in this respect in women on this or the other side of the Atlantic, and he thought that perhaps the best explanation had been offered by Dr. Simpson, that very much depended upon the condition of the mind of the man who made the investigation.

He believed it was generally recognized that the occurrence of pelvic cellulitis and peritonitis was much more rare than had been supposed. He thought it had been proved beyond contradiction that the so-called pelvic cellulitis had been inflammation confined to the Fallopian tube and the peritoneum in the immediate neighborhood. If, therefore, the question of pelvic cellulitis could be removed from the case, he thought that his treatment and Dr. Emmet's would be very much the same in similar cases. He had not stopped to inquire so much about the cause of the displacement, but had been able in a large majority of cases to give permanent relief by a properly adjusted pessary, but the proper adjustment of the pessary was the entire secret of the treatment. In some cases there is a great deal of tenderness and some difficulty in replacing the uterus, which he always does by means of the sound, but in such cases it is not desirable to at once apply the pessary, and the treatment must be adapted to relieving the congestion of pelvic inflammation. Where adhesions have taken place, the pessary must be set aside altogether.

DR. EMMET, in closing the discussion, said that those who neglected to examine the patient by the rectum would remain in profound ignorance of the exact condition of the contents of the pelvis. He regarded it as utterly impossible to detect by vaginal examination all these changes, and that was one explanation of the diversity of views held concerning the occurrence of pelvic inflammations. That these inflammations occur more frequently in America than abroad he believed was true, and this fact could be easily explained. That pelvic inflammation does occur, and quite as commonly among the unmarried as among the married, he had no question, and he knew that it often cured itself, or aided only by hot-water vaginal injections. It is stepping in and interfering that in many cases does the damage which the woman must carry to her menopause. He knew that pelvic peritonitis was a common occurrence in consequence of imprudence, and this opinion was the result of a great many years of experience.

DR. SAMUEL C. BUSEY, of Washington, read a paper on

CYSTOCOLPOCELE COMPLICATING PREGNANCY AND LABOR.

The word cystocolpocele was introduced to express correctly the anatomical and pathological condition of prolapse of the bladder into the vaginal passage. When the fundus remains between the uterus and the symphysis pubis and the lower part of the posterior wall is felt in firm, small rugæ behind the pubis, it is *partial*, and is usually very tender and the seat of extreme pain when the uterus is forced down into the pelvis.

When the sac containing urine occupies the cavity of the pelvis, filling the hollow of the sacrum, pushing the os uteri beyond reach and occluding the vaginal passage, it is *complete*. Complete prolapsus may also occur without distention, when the bladder will be felt disposed in rugæ, extending from the symphysis pubis to the uterus, with the os high up and far back.

There are only six cases on record of cystocolpocele complicating pregnancy and brief abstracts of these were in the paper. One of these cases occurred in Dr. Busey's own practice.

Cystocolpocele complicating labor is far more common than that complicating pregnancy, although it, too, is rare. It has received general if not adequate attention from a few of the more recent writers on obstetrics, as a hindrance to and a cause of lingering and painful labor.

The essential and constant factor of causation is multiparity: but without a co efficient this cannot be regarded as a cause. The changed relation of the pelvic viscera resulting from child-birth invites and facilitates the operation of other coincident and more active agencies. Among the predisposing causes are pendulous abdomen, relaxation of the anterior vaginal wall, increased amplitude of the vaginal canal.

Lingering labor is the most prominent subjective symptom, characterized by acute ineffective pains. In most cases, the pains are sufficient to impress the patient with their distinctive peculiarities. Their frequency and sharpness, with the distressing sensation of fulness and distention in the lower part of the vagina, indicate rapid progress and speedy termination, yet in fact they are usually unaccompanied with any advance of labor. The only positive and absolutely certain symptom is the discharge of urine from the urethra and the lessening or entire subsidence of the swelling. The introduction of the catheter does not always completely empty the bladder, because of its division into two separate compartments.

After speaking of the differential diagnosis, Dr. Busey said that the treatment consisted in speedy and complete evacuation of the bladder, which not only removed the obstacle to delivery, but restored the natural course and usually promoted the rapid progress of labor. This must be accomplished by the catheter or

skilful manipulation of the cystocele or by both combined. It does not appear from clinical reports that any special treatment was needed during the puerperal period.

DR. WILLIAM GOODELL, of Philadelphia, Pa., had had two cases; one during labor and the other a few days before labor. The one which occurred a few days before labor deceived him completely at the outset, and also his head nurse who had been a practising midwife for several years.

In the other case, the pain was excessive, and the pouch of the bladder was sufficiently large to obstruct the head, and then, finding it impossible to introduce the catheter, he applied the forceps, raised the head and was then able to introduce the instrument. The labor was terminated with the forceps.

First Day—Afternoon Session.

DR. WILLIAM M. POLK, of New York, read a paper with the title:

ARE THE TUBES AND OVARIES TO BE SACRIFICED IN ALL CASES OF
SALPINGITIS?

The author of the paper defined salpingitis as that disorder which we have treated as an inflammation of the planes of cellular tissue belonging to the uterus and its appendages, and which clinically, according to its behavior and influence, has been called acute, chronic, and recurrent cellulitis and peritonitis.

The adhesions determine in the main the ultimate results of the salpingitis. If these be slight the damage is usually insignificant and easily repaired. The change which the adhesions bring about most constantly is dislocation and imprisonment of the tubes in faulty position, with the outer end closed frequently, and the concomitant parenchymatous changes in their walls. The ovaries are also involved, and they are unable to properly perform their functions. The uterus is displaced, the malpositions and fixations of it and the other pelvic organs constituting, frequently, the most prominent sequelæ of the disease.

The general course or prognosis of salpingitis may be expressed by saying that the majority of the cases recover. Of the remainder, much the greater number live as invalids, while the small minority perish. The term recovery was not employed in its ideal sense; that is, recovery not only of health, but of function. This question concerning salpingitis was framed with the view to pushing it into the domain of that large class of sufferers who, remaining invalids, have no chance of efficient relief except in laparotomy. Had he been asked, one year ago, whether the tubes and ovaries should be sacrificed in all such cases of salpingitis, he would have replied "Yes." But some experience since had caused him to doubt the accuracy of that conclusion. All of these cases were of long standing, and the principal symptom was dysmenorrhea with more or less constant pelvic pain, in-

creased by hard work, generally by coition, and recurrent inflammatory attacks.

While comparing the pathological conditions with the histories, it occurred to him that the adhesions might be the potent factor in the patient's sufferings. If that be true, it was at once evident that a cure might be effected by simply releasing the imprisoned organs. Of course, certain objections naturally suggested themselves, as the question of the reformation of the adhesions. Can this be prevented, and if so, how? The prime requisite is to so alter the position of the uterus and its appendages as to separate the ends of the adhesions. When posterior adhesions exist, this can be done by Alexander's operation or hysterorrhaphy. When the alteration of the position need only apply to the tubes and ovaries, hysterorrhaphy or Imlach's operation of shortening the infundibulo-pelvic ligament would seem sufficient. In two instances, Dr. Polk had sought to accomplish the end by the drainage tube alone, but the ultimate results had been less satisfactory than where Alexander's operation had been substituted.

The object of the paper was to show that, in certain cases, life can be saved and health restored without mutilation. If freeing these organs will rid the patient of her disorders, there is no need to go further; if not, then, as heretofore, amputate the tubes and ovaries.

The histories of eight cases were submitted.

Nothing in the paper should be construed into a denial of the value of extirpation of the tubes and ovaries. Within its proper limits, it is one of the greatest advancements in our department, but because of the mutilation it involves, it behooves us to confine it within the narrowest limits compatible with the life and health of our patients. Granting the result of health and comfort claimed for this disruption, the question arises concerning the utility of leaving an occluded tube in position. For the purpose of procreation perhaps there is none, but for the purpose of satisfying the patient's desire to escape mutilation, yes.

DR. A. MARTIN, of Berlin, Germany, said it gave him great pleasure to hear that Dr. Polk did not regard every tumor of the tube as a salpingitis. He thought that progress could be made only by differentiating between the different diseases of this organ, and then spoke of the great rarity of neoplasmata of the tube. The most frequent diseases are the inflammatory, which generally come from the uterus, and as simple catarrh of the uterus is the most common affection of that organ, so also catarrh is the most frequent disease of the tube. In only a very small number of cases have cocci of any kind been found. It has been very often supposed that salpingitis is of gonorrheal origin, but only a very few cases have shown the gonococcus located in the tube. One of these cases he found some months ago, and it was the second that had been recognized. Hegar has observed tuberculosis of the tube, but its occurrence is very rare.

In all these cases an early occlusion of the tube is a frequent

result. But out of a very large number of cases only a small proportion had given him cause for resorting to operative treatment. If, by long observation, we do not succeed, in the inflammatory cases, in reducing the pain, the size of the tube, and restoring the health of the patient, then the operation should be performed. He had performed it in about eighty cases, but very seldom had the tube itself given the indications for the operation. Generally, it was the spread of the disease from the pelvic organs, particularly the ovaries, and in his cases a very frequent complication had been abscess of the ovary, which, although a severe complication, does not occur so frequently as to allow us to go on and operate on all cases of salpingitis. He had never performed the operation for salpingitis in which the disease was of recent date. He had not performed the operation where the disease had not caused the tube to rise to a distinct tumor. In nearly all these cases there was severe peritonitis, which forced the operation, after he had tried to cure the patients by general treatment. That we could succeed in curing a large majority of these cases by general treatment, he could prove by his own statistics. This he had done by rest, the application of leeches and ice to the abdomen, and the use of opium as long as there was tenderness. After the tenderness has disappeared, he usually applies iodine, brine or peat baths, etc., and gives attention to the general system by the use of iron. Massage must be used with very great precaution.

DR. T. ADDIS EMMET, of New York, was satisfied that two-thirds of the cases operated upon to-day would not be operated upon five years from now by any surgeon who has any respect for his reputation.

DR. GOODELL, of Philadelphia, agreed with Dr. Martin and Dr. Emmet in a great measure, but there was one point which he would be pleased to have made clear, and that was whether a collection of purulent fluid could be dispersed by general and local treatment. He could not understand entirely how a hemato-salpinx could be so dispersed.

As to the paper itself, it struck him that the remedy proposed by Dr. Polk was a little more dangerous than removal of the ovaries. Why resort to a second operation, with its risks, and not remove the tubes and ovaries while the abdomen is open? He should do so rather than try an experiment which was unnecessary because useless. He believed that Dr. Polk was on the right track, but he did not like two operations when one would answer the purpose.

DR. GRANVILLE BANTOCK, of London, did not for a moment believe that the cases of salpingitis, which were due more to catarrh of the organ than to gonorrheal infection, were proper cases for operative procedure. As to pyo-salpinx, he had sometimes doubted the correctness of his conclusion that sooner or later it would require operation, for he frequently found only a small quantity of cheesy matter that made it appear as though nature was capable of effecting a cure even in these cases. Hemato-salpinx was more serious still. As to the alternative proposed by Dr. Polk, he was much more inclined to agree with Dr. Goodell. While he did not wish to say that the procedure was unjustifiable, he believed it was not the correct treatment. The idea of supporting the uterus by the drainage-tube he regarded as

most fallacious. In many of the points of the paper he was in accord with Dr. Polk, and he could only hope that further experience would lead the author to think as he did.

DR. SUTTON, of Pittsburgh, Pa., believes that when pus is in the tube, it is as much the duty of the surgeon to evacuate that pus as it is his duty to evacuate pus from an abscess in the forearm. No man has a right to allow a woman to go about carrying a pus-sac within the pelvic cavity, which is liable at any moment to discharge into the peritoneal sac.

The discussion was continued by Drs. Wylie and Emmet, of New York, and was closed by Dr. Polk.

DR. PAUL F. MUNDÉ, of New York, read a paper on

DRAINAGE AFTER LAPAROTOMY.

Drainage of a cavity which is discharging or is likely to secrete is an established principle in general surgery, but the same principle does not apply to abdominal surgery. A very great diversity of opinion exists as to the necessity, even the justifiableness of abdominal drainage after removal of adherent abdomino-pelvic tumors: some operators always inserting the drainage-tube in these cases, and others, equally successful, rarely or never using it. The majority of laparotomists at the present time employed it in cases where there were extensive adhesions or where purulent or other infectious fluids have escaped into the peritoneal cavity during the operation.

The questions which, to the author of the paper, seemed to require answers were the following:

1. In what class of cases does drainage theoretically seem necessary?
2. What are the advantages of drainage?
3. What are the disadvantages of drainage?
4. What form of drainage is the best and the least dangerous?
5. What substitute can be offered for drainage; or how can the necessity for its employment be avoided?

First.—The introduction of a glass tube into the abdominal cavity for the purpose of permitting the escape of blood and serum after ovariectomy was first employed by the late Dr. E. R. Peaslee, and the same object has been in view in their use ever since.

Second.—Obviously the removal of intra-abdominal fluids which by subsequent decomposition may cause septicemia.

Third.—In considering this question, he premised by saying that it had always seemed to him one of the curious and surprising phenomena of the many which recent experience with laparotomy has taught us, that a glass, hard or soft rubber tube can be inserted into the peritoneal cavity in immediate contact with the moving and delicate intestines, and can be kept there for days and weeks, exposing the sensitive peritoneum more or less to external infection, and still be not only not injurious, but positively

life-saving. It was in this respect that abdominal drainage seemed to him so widely different from and so vastly more dangerous than ordinary drainage of an external wound. He had drained because he believed in following the maxim, "when in doubt, drain." In several cases, however, he had his suspicion raised that the tube acted as an irritant, and that the patients would have done well had the abdomen been completely closed, and the subsequently effused blood, if any, allowed to take care of itself. He believes that as soon as the fluid becomes merely serum, or if even slightly sanguinolent, the tube should be removed, as it is likely to excite local inflammation.

Fourth.—The least complicated and least likely to irritate or become occluded is the best form of drainage tube. The *sine qua non* of success is scrupulous cleanliness and careful antisepsis.

Fifth.—Inasmuch as drainage after laparotomy is always a *prophylactic* measure against septic infection from the secretion and decomposition of fluid in the peritoneal cavity, which danger may never occur, the doubt naturally arises (1) whether that precaution is indeed necessary, and (2) whether it cannot be averted by some other means than drainage.

As to the *necessity* for drainage, that is precisely the question under discussion. It would seem that a small quantity of pure blood, or of bloody serum, in the peritoneal cavity, if unmixed with pus or putrid matter or flocculi, is of no particular noxious import, *provided all possibility of septic infection from without has been prevented.*

There are two indispensable conditions to be secured if drainage is to be omitted: (1) the thorough cleansing of the peritoneal cavity; and (2) the observance of universal and most scrupulous antisepsis in every respect during the whole operation. This antisepsis may be either according to the most improved modern principles, or, if the operator prefers, by means of thorough enforcement of *cleanliness* in all its details.

DR. MARTIN, of Berlin, said that he uses drainage only after supra-vaginal and vaginal hysterectomy, and wherever a large surface of sloughy character or large cavities in the broad ligaments must be left. In these cases he uses a drainage tube and always through the vagina, not through the abdominal wall, because he believes it to be very correct to close the abdominal wound whenever it can be done with safety. He does not inject through the drainage tube, as he has obtained an impression from his experience that the injections caused the patients to suffer.

DR. BANTOCK, of London, is so confident as to the value of the drainage tube, and so little afraid of injurious results, that he uses it on the slightest excuse. Where he finds it impossible to dry the peritoneal cavity, and where it is impossible to remove the whole of the contents of a cyst that has burst into the peritoneal cavity, he uses the drainage tube. In the last-named cases, he washes out the cavity with plain warm water. It was perhaps quite well known that he had given up all in the

form of antiseptics. He has no fear of germs, whether they come from the atmosphere or anywhere else. He observes cleanliness to the utmost possible extent. He believes that his improved results have been due, in a very great measure, to the disuse of any so-called antiseptic fluid. He was far from believing that the drainage tube is necessary in the majority of cases of ovariectomy. He uses the ordinary straight glass tube when drainage is necessary, empties the tube every two or three hours, and as soon as the fluid has become free from blood, and is nothing but plain, quite clear serum, he removes it.

DR. GARDNER, of Montreal, had entire confidence in the correctness of Dr. Bantock's rules for the use of the drainage tube, and he had been convinced of the great value of the instrument.

DR. W. GILL WYLIE, of New York, spoke of the use of the drainage tube in detecting hemorrhage after laparotomy. His views did not differ very much from those given by Dr. Mundé, and he agreed with Dr. Bantock that if a *clean* glass tube is used it need not be feared.

DR. WILLIAM GOODELL, of Philadelphia, was not a believer in the drainage tube, but was skeptical regarding it. He uses it because gentlemen who have been so successful employ it, and that was his only reason. He had seen the advantage of the tube in detecting hemorrhage in one case.

DR. MUNDÉ closed the discussion by saying that he employed antiseptics only as a means of securing *perfect* cleanliness. Of germs he knew nothing, for he believed their influence on the production of septic infection and other diseases to be still *sub judice*.

Second Day—Morning Session.

The PRESIDENT referred to the death of Dr. John Scott, of San Francisco, and appointed Dr. Thomas Addis Emmet, of New York, to prepare a memoir for the volume of transactions.

DR. C. D. PALMER, of Cincinnati, O., read a paper on

THE THERAPEUTIC VALUE OF SOME MEDICINES IN THE TREATMENT OF HEMORRHAGIC CONDITIONS OF THE UTERUS.

After referring to the fact that the work of the Society had been largely surgical, only five papers on the therapeutical uses of medicine and three on obstetric subjects having been read before it, and also to the fact that a similar state of affairs existed in all the medical and surgical societies in this country, the author of the paper said that uterine hemorrhage could often be treated advantageously by means of drugs. Among the remedies which time and experience have proved to be valuable in meeting the indications in these cases are ergot, digitalis, cannabis indica, bromide of potassium, arsenic, gallic acid, viburnum, hydrastis, gossypium, and hamamelis. It was the aim of the paper to speak of the special and relative value of these remedies. No one of them is more frequently prescribed and with greater success than ergot in some of its preparations. It is singularly adapted to conditions of the uterus with relaxed muscular fibres and dilated

and engorged blood-vessels. Digitalis is serviceable in cases of low arterial tension. Cannabis indica is not very reliable. Bromide of potassium is a remedy of no mean power, and is most efficacious in conditions of sexual excitement, and ovarian irritation and congestion. Arsenic possesses decided advantages in selected cases, as in menorrhagia in growing girls and young women. Gallic acid is disadvantageous, because of its bulk and liability to disturb the stomach. Hamamelis is entitled to a higher position as a hemostatic than it now occupies. It is adapted to slow long-continued flux, hemorrhage passive in character, and in these cases is the remedy *par excellence*. The best preparation is the fluid extract in doses of a few drops to two drachms.

Of course none of these remedies would supersede local and surgical measures.

DR. FORDYCE BARKER, of New York, spoke of the value of arsenic and the bromide of potassium, but the remedies which he had found to be the most valuable for the time in cases of profuse hemorrhage occurring near or at the climacteric, were the fluid extract of hydrastis and the fluid extract of hamamelis combined. He knew of no remedy which so effectually controls the hemorrhage after the period has come on as this combination. If there is marked evidence of vaso-motor irritability, he usually adds six or eight drops of the tincture of nux vomica.

DR. LLOYD ROBERTS, of Manchester, England, had found that ergot, which he believed was the remedy if only one could be selected, acted much more beneficially in cases of flabby uteri about the menopause, when given *between* than when administered during the menstrual period.

DR. H. P. C. WILSON, of Baltimore, had had the most trouble with girls who are commencing menstruation, and in those cases more attention should be paid to the general health than to the use of any particular drug. He had not the slightest confidence in any internal remedy for arresting uterine hemorrhage.

DR. JAMES R. CHADWICK, of Boston, spoke of the value of Chian turpentine; six grains, three times a day.

DR. W. L. REID, of Liverpool, England, spoke of the value of alum, twenty grains daily, and the use of hot water.

DR. J. AMÉDÉ DOLÉRIS, of Paris, France, read a paper in French on

ALEXANDER'S OPERATION,

in the first part of which he spoke of the normal condition of the pelvic organs, the functions of the different structures; and in the second part dealt with the displacements to which the operation was adapted.

The communication was discussed by Dr. A. Cordes, of Switzerland; Dr. W. L. Reid, of Liverpool, England; Dr. A. Martin, of Berlin, Germany; Dr. W. T. Lusk, Dr. H. Marion Sims, and Dr. C. C. Lee, of New York; Dr. Aust-Lawrence, of Bristol, England; Dr. H. A. Kelly and Dr. Goodell, of Philadelphia.

DR. A. J. C. SKENE, of Brooklyn, N. Y., President, then delivered

THE PRESIDENT'S ANNUAL ADDRESS.

This Society, as the name in its broadest sense implies, comprehends all that pertains to obstetrics and the diseases peculiar to women, and hence has to deal with the most complex structures and functions manifested in the universe. It follows, therefore, that while a thorough knowledge of the special subject is an absolute necessity, a certain familiarity with all collateral branches of medicine and surgery is highly essential to the accomplishments of the ends and aims of all who claim fellowship here. If a man devotes his whole time to the practice of one branch of medicine or surgery, he should not expect to be excused if he lacks a general knowledge of all the great principles of the science of medicine. On the contrary, the one is required as a basis for the other. The over-zealous generalist who fails to see the reason for the existence of specialists, is one who knows as much about everything as he does about anything, and takes his cue from the pseudo-specialist, who knows a little about one thing and nothing about other things. Both are incompetent, and do not represent in any respect the profession of medicine at this day. It should be understood that all due respect is paid to the well-qualified general practitioner. In making a classification of medical men he should head the list, because he has at his command all the specialists, if he chooses to call upon them.

Specialists must of necessity have their own societies, and hence the gynecologists naturally come together from all parts of this land between the two great oceans, and bring in the autumn the fruits of the year as their contribution to the gynecology of the world, and a worthy offering it is. It is a recognized fact which an alien acknowledges with pleasure that America has been notably active in the development of modern gynecology, and first among the foremost in organizing societies for its cultivation.

The first gynecological society was established in Boston. The first national society of the kind is the one now in session here. These examples have received the high compliment of imitation by Great Britain and Germany, whose gynecological societies rival, but do not surpass the original. The intrinsic value of this becomes more imposing by recalling the fact that all this has occurred within a short space of time.

Modern gynecology is not much more than seventy-five years old, yet during that comparatively brief period there has been much accomplished. The record is quite remarkable and well entitles him who has mastered the subject, to a laudable pride in his calling.

The surgery of gynecology has been marvellous in its progress. Many of the diseases of women which formerly impaired or destroyed life are now largely under the control of the surgeon. At least ten of the most difficult, complicated, and heroic operations in the whole range of surgery are gynecological, and have been

devised by men who have devoted their best efforts to this branch of practice. These are exclusive of the adaptation of other operations to the requirements of the gynecologist. There have been devised for the examination and treatment of diseases of women over seven hundred and eighty instruments, most of them in modern times. This is exclusive of needles and thread, of which there are many. For the correction of displacements of the uterus there are about three hundred different pessaries in use. Many of these instruments and uterine supporters were invented to meet the requirements of individual practitioners, and hence they may be of little value for general use. The mere fact of their existence, however, shows the praiseworthy industry of those who are engaged in this field of action.

The growth of the literature of gynecology has also been quite surprising in our time. During the last three-quarters of a century about 6,000 books have been published treating of the diseases of women. In the past eight years, 804 books and 7,505 journal articles and pamphlets have been added to the list. This is almost equal to the whole literature of medicine and surgery three hundred years ago, and would exceed it if all that is speculative in the old works was excluded. Of these modern works, the majority are devoted to surgical gynecology, which shows that surgery is still receiving the most attention. This is to be expected. There is most of art in surgery, and most of science in medicine, and it is quite in the order of things that the art should take the lead at certain stages in the development of knowledge.

Gynecology has been no exception to this rule; in fact, were it not for its achievements in surgery, gynecology would not have a very well-sustained claim to a place among the specialties in medicine. The inventive, ingenious, and dexterous operators have won the laurels so far, or at least most of them. They have also been wise and prompt in appropriating all that is useful to them in general surgery, and in casting aside the means and methods which have been tried and found wanting.

The scalpel of the surgeon can now fearlessly and safely find its way through the delicate tissues to the very fountain of life, in his endeavor to eradicate the cause of suffering and danger.

The surgeon has ever before him the injunction that henceforth he must live a goodly life, which means that he must be pure not only in heart, but in all respects clean. But it would be vanity, and worse than vanity, to rest satisfied with that which has been thus far attained. With the true gold that has been found, there is much impurity which needs to be washed away. In fact, the enthusiasm which leads to discovery, and the reckless haste with which the superficial worker seeks to imitate the work of the leader, both tend to produce that which is useless, or that which is worse than useless.

It appears that operative surgery still holds too prominent a

place in every-day thought and action. It is but a matter of time, however, when it will find its true position. Surgery naturally comes first, but it should not long remain so. The savage could light a fire and cook his food long before anything was known about natural philosophy: and surgeons could bind up wounds before they understood the laws governing the repair of tissue. But the time surely has now come, when the surgeon, whose scalpel is ever warm from contact with living tissue, and whose pen is ever busy declaring and defending the claims of his work, might give a little time to those who have other life-saving means to proclaim.

Would it not then be better at the present hour, in place of seeking further to develop the tragic and wonderful in surgery, to give a little more time to weighing and estimating the value of that which has already been tested? This would enable the conservatives to advance, while the radicals might lessen their speed a trifle, and then both could go forward marching hand in hand, steadier, stronger, and better by the slight change in the order of their going. Not that the art of surgery should be cultivated less, but the science of medicine more.

It is due to the profession at large to say that preventive medicine has made marked progress in this decade. The students of hygiene and sanitary science have accomplished great things in pointing out the causes of disease that lie in ambush in the earth, and air, and water, but gynecologists have as a rule been silent about the social evils and habits of life which turn out into the world malformed and sickly women. While the whole world listens in breathless interest to every word spoken by that learned scientist who tells us how to save a few of the canine species from rabies, there is hardly a whisper heard regarding the millions of women who suffer from the contaminating contact of their mad fellow-creatures. Apart from an occasional condemnation of corsets and high-heeled boots, there is not much to the credit of this special branch of practice, but enough perhaps to show the possibilities of higher attainments in the future.

As showing what may be done in this direction, a comparison may be made between the diseases of women and obstetrics. The literature of obstetrics is far the most complete, and there is more harmony in regard to its principles and practice in the schools and nations throughout the civilized world. This may be attributed to the fact that obstetrics is the older branch of the two, but it appears that the obstetricians in modern times have been quite as active in the advancement of their science and art, and in adopting all that is new and useful in the collateral branches of medicine and surgery.

That which brought the greatest glory to gynecology and did most towards furthering this specialty, was the treatment of vesico-vaginal fistula, at one time a very common affection, but

to-day, thanks to improved obstetric practice among the majority of medical men, such fistulae are becoming so very rare that a sufficient number of cases for demonstrative teaching can hardly be found. This illustrates how prevention of the first step in the chain of morbid states is boundless in its effects.

This multitude of gentlemen who write more than they read, "scatter like deer at the sound of the hunter's horn," when compelled to defend themselves in public discussion before a tribunal of competent judges in well-regulated medical societies. If there were more meetings of societies such as this, at which all men could contribute to the common grist and receive that which they gave in the way of knowledge, after it has been ground and sifted by honest, fearless discussion, more benefit would be obtained than by reading, practising, and writing. More than that, if medical societies, now mostly limited to communities, could be made broader, that is, national and international in fact, not alone in name, the advantages would be great and the progress would be more sure, if not so rapid. This would apply to all branches of medicine and surgery.

DR. GEORGE GRANVILLE BANTOCK, of London, England, then read a paper on

THE TREATMENT OF THE PEDICLE IN SUPRA-VAGINAL HYSTERECTOMY.

In his first hysterectomy, Dr. Bantock divided the pedicle by means of the cautery according to the method of Baker Brown, but the hemorrhage was so profuse, on removing the clamp, that it was necessary to ligate the broad ligaments separately. The stump was then tied in two parts, secured at the lower angle of the abdominal wound, but was within the peritoneal cavity. The ligatures slipped, oozing into the peritoneal cavity occurred, and the patient died of septicemia on the fourth day, despite the strict observance of all antiseptic details.

This method of treating the stump was the very one so strongly recommended by Sanger and Schroeder, but Dr. Bantock had been so impressed with its fallacy that he resolved never to try it again.

In the next case, he used Cintrat's serre-nœud, but found it inefficient, and was obliged to substitute Koeberlé's, which he subsequently modified and produced the instrument he now uses. He uses soft annealed iron wire. He then reported several cases which illustrated the efficiency of the constrictor in completely controlling hemorrhage during the removal of large tumors.

In one successful case, the pregnant uterus was removed together with a fibro-cyst weighing thirteen pounds. In his forty-fifth case, he applied the serre-nœud just below the level of the ovaries, partially tightened it, then included the broad ligament in long

hemostatic forceps, thus securing the large vessels. The peritoneal covering of the uterus and tumor were then divided three inches from the wire loop and were reflected towards the latter. Tightening the loop, the pins were inserted an inch from the wire and a second constrictor was applied just behind the pins, after which the first was removed. In this way an additional half inch was gained in the pedicle and the strain on the broad ligament was relieved.

In a subsequent case, this method was still further modified by first reflecting the peritoneal envelope, while temporarily securing the broad ligaments, and then applying the loop: the ovaries were ligated separately subsequently.

The treatment of the stump in supra-vaginal hysterectomy is a very different thing from that of the ovarian pedicle, yet the two had been regarded as identical. The writer had no fixed prejudices in the matter, but simply spoke from the results of his own experience, when he said that the intra-peritoneal method of treating the pedicle in supravaginal hysterectomy had been as uniformly disastrous as the extra-peritoneal method had been successful.

To summarize:

1. The broad ligaments may be so long, and the ovaries so easily raised from the pelvis that the whole can be easily included in the loop.
2. One ovary may be included while it may be necessary to ligate the other separately.
3. It may be necessary to ligate both ovaries separately.
4. The tumor may grow between the folds of either broad ligament so that it must be partially enucleated.
5. The tumor may be situated so low down in the body of the uterus that it may be necessary to separate it largely from the peritoneal covering before a sufficient pedicle can be formed.

If the stump is properly secured at the time of the operation, the less it is interfered with the better. He had sometimes allowed two weeks to elapse before disturbing the dressings. The main object is to keep the stump dry; therefore the dressings should be changed as soon as they become moist.

If the wire is properly applied at the time of the operation, it will not be necessary to tighten it again for four or five days, unless there is marked oozing. If the pedicle is small, it is not necessary to tighten the loop at all. There is no hurry about getting rid of the stump, so long as it remains dry. Styptics should not be applied to the stump because they are unnecessary and may be injurious.

The following table was submitted.

Supra-vaginal hysterectomy, treatment of the pedicle by the extra-peritoneal method, 57 cases; 45 recoveries, 12 deaths. 5 of the deaths were from kidney disease, 1 from acute enteritis, 2

from hemorrhage, 1 from gastro-enteritis, 2 from peritonitis and septicemia.

Hysterectomy, extra-peritoneal method, 13 cases; recovery in all.

Hysterectomy by enucleation, etc., 2 cases, recovery in both.

Cases treated by the intra-peritoneal method, 5; one recovery and four deaths.

The discussion was opened by DR. A. MARTIN, of Berlin, who said that the danger in dropping the pedicle had been hemorrhage, and that was what induced Péan to fix the stump outside with needles. The only way, however, to finish any abdominal operation is to restore the parts to their relation within the abdomen, and all said it must be possible to secure the pedicle from bleeding during the operation and also during recovery, and he believed that they had succeeded in both directions. To prevent hemorrhage during the operation he was the first to use the india-rubber tube around the pedicle (Esmarch), and he could say that no blood need be lost except what is in the tumor itself. To prevent hemorrhage during recovery, he completely unites and covers the stump in a conical way, which he demonstrated upon the blackboard.

As the matter now stands, he thought that the number of cases was not sufficiently large to enable any one to decide which was the best way to treat the pedicle. Remember the treatment of the pedicle in ovariectomy. First the pedicle was dropped, then fixed outside, and this great advance in ovariectomy must be attributed to Sir Spencer Wells who had so great success in fixing the pedicle outside, but now no one fixes it outside; every one tries to drop the pedicle, even those who were the most decided friends of the method by fixation outside.

Dr. Martin does not perform supra-vaginal hysterectomy in cases of sub-peritoneal fibroids. He has enucleated four times in pregnant women; saved the mother and child in one case; in one case the mother. Of the other two, one died of nephritis after abortion, and the other died of pneumonia as the result of abortion.

DR. A. R. SIMPSON, of Edinburgh, Scotland, thought that it could not yet be said that one method of treating the pedicle overtopped the other, but that in some cases one, and in other cases the other should be employed. As to the general question, however, he thought that, on the whole, the clamp was likely to hold its ground, and one reason was that it was a much shorter procedure than had been described by Dr. Martin, and the question of time is sometimes an important element.

DR. GARDNER, of Montreal, and DR. H. MARION SIMS, of New York, spoke favorably of the extra-peritoneal method, and also DR. M. D. MANN, of Buffalo, who had employed it in six cases.

DR. VAN DE WARKER, of Syracuse, had adopted the intra-peritoneal method in two cases, and the method by fixation of the stump externally in two cases. One of the patients treated by the intra-peritoneal method died, but the gravity of the case was such as to render recovery almost hopeless.

DR. BANTOCK, in closing the discussion, said that the internal method was much more taking than the extra-peritoneal method, for the recovery in such cases was much more rapid. But, as he

said in his paper, the ideal method has not yet been brought forward. While he was quite willing to allow Dr. Martin to complete his method and drive him out of the field, he feared that he would die impenitent and stick to that which he is now employing.

Second Day—Afternoon Session.

DR. JAMES B. HUNTER, of New York, read a paper with the title

DEATH FROM A RARE CAUSE AFTER LAPAROTOMY.

The case was one in which acute dilatation of the stomach occurred after the operation, which was for the removal of both tubes and ovaries for disease of the latter organs of several years' standing, and giving rise to severe dysmenorrhea.

The peculiarity of the vomiting, which continued at intervals after the operation until death, was that large quantities of fluid were regurgitated without much effort. Tympanites and tenderness were marked; the temperature was 101° F., and it was supposed that the patient had succumbed to a low form of peritonitis.

The autopsy revealed extreme dilatation of the stomach, the organ filling the abdominal cavity, and extending downward to within three inches of the symphysis pubis. The intestines and omentum were crowded into the pelvis. There was no evidence of either old or recent peritonitis. The history of the case excluded previous gastric disease, and showed that the enlargement had taken place after the operation. There was no obstruction at the pylorus.

The case taught the lesson that every patient who was to be made the subject of laparotomy should be thoroughly examined, since in this way only can the integrity of every organ be ascertained. Gynecologists were too apt to confine their attention exclusively to the pelvis, at the risk of overlooking the complications in the thoracic or abdominal viscera.

DR. A. REEVES JACKSON, of Chicago, read a paper on

THE INTRAUTERINE STEM IN THE TREATMENT OF FLEXURES.

His object was only to present the results which he had observed to follow a certain plan of treatment when applied to a selected class of cases, and explain the details of the method employed. According to his observation, a considerable proportion of flexions of the uterus do not of themselves need any treatment whatsoever. There are others which are wholly unamenable to treatment. There are still others which are made worse by any treatment with which he had become acquainted. He began the use of the intrauterine stem in 1870, and had continued it down to the present time. The single symptom which he requires for this mode of treatment of flexion is dysmenorrhea.

If there is also sterility, removal of the barrenness is only an incidental and secondary consideration.

Having ascertained the presence and the direction of the flexion, he passes a flexible olive-tipped bougie to the fundus of the uterus, and permits it to remain from two to ten minutes. He repeats this at intervals of one to three days, according to the amount of irritation or pain produced; in some cases there is neither. At first the bougie is small, and larger ones are used afterwards. This treatment is preliminary, and is continued until tolerance of the uterus has been fairly tested and proven. The essential principle consists in the slow, gradual conducting of the method. The uterus must be coaxed and not forced into proper shape.

The rules by which he had been guided were: never use the stem in any case of flexion in which the deformity is not the cause of the dysmenorrhea; nor until tolerance of the uterus has been ascertained by previous systematic introduction of the sound; nor in any case in which the flexion is maintained by extrauterine adhesions, or the presence of a fibroid, or some manifest evidence of inflammation of the uterus or surrounding structures.

A table of sixty-seven cases was submitted.

The three cardinal principles by which the practitioner should be guided in employing this method were watchfulness, patience, and slow progress.

The paper was discussed favorably Dr. M. Ogden, of Toronto, and Dr. Aust-Lawrence, of Bristol, England.

DR. GEORGES APOSTOLI, of Paris, France, then read a paper in French on

SOME NEW USES OF THE GALVANIC CURRENT IN GYNECOLOGY.

In employing the continuous current, it is always necessary to take into account two factors; the duration of the application and the intensity of the current expressed in millampères. Thanks to the technique we use, it is now possible to use a much higher dosage than formerly. When a strong current is employed, there is a caustic action at each pole, while the nutritive changes or "trophic action" are increased in the same proportion. In galvano-caustic applications within the uterus, it is intended that one pole shall cauterize freely, while the other, which is placed upon the skin, must be carefully watched in order that it shall not cause pain and vesication. By using the pole constructed of *glazed earth*, it is possible to apply a current varying from fifty to two hundred millampères, without causing pain or injury to the skin.

This has made galvanism a valuable agent in uterine therapeutics. Formerly local applications were confined to the cervix uteri; now we know that it is necessary to attack the diseased

mucosa directly, which can be done more safely and thoroughly by means of the constant current than by the curette. The former accomplishes the results more slowly but surely, not only curing the endometritis, but also dispelling the inflammation of the parenchyma of the uterus.

The author of the paper began to practise electrolysis in cases of uterine fibroid in 1882, his treatment being mainly directed to the interior of the uterus, for the following reasons:

1. The endometrium is diseased in nearly all cases of fibroma, hence the hemorrhage will be checked by cauterizing it.

2. By modifying the nutrition of the mucosa, that of the adjacent neoplasm is also affected.

3. By introducing one pole into the uterus, the operator is able to place the region directly in the current.

In all cases of metrorrhagia Dr. Apostoli places the positive pole within the uterine cavity, but uses the negative pole in other cases.

The superiority of the constant current in gynecology was not confined to the treatment of endometritis and fibrous tumors of the uterus, and he believed that, in time, it would constitute the principal curative agent in the medical treatment of pelvic troubles.

DR. JAMES R. CHADWICK, of Boston, discussed the paper and then read one on

THE OPERATION FOR VENTRAL HERNIA AFTER LAPAROTOMY.

Hernia after laparotomy first appears a year or more after the operation. Palliative treatment is of only little avail.

Strangulation has not supervened in any of the cases. The frequency of hernia after laparotomy must be greater than is appreciated, but the data for determining this point are wanting. It has not been determined what method of closing the abdominal wound will prevent the occurrence of hernia. Some lay great stress on suturing the peritoneum with catgut before closing the musculo-aponeurotic wall with silk, silver, or catgut. While perfect union of the peritoneum may tend to favor union of the musculo-aponeurotic layers externally to it, we have no reason to believe that the condition of the peritoneum has any effect upon the development of hernia. The fact that herniæ occur as readily with an intact peritoneum as with one that has been severed shows that it has practically no retentive power. Dr. Wylie lays stress on the fact that it is the tendinous fascia of the transverse and oblique abdominal muscles which really gives the retentive power of the abdominal walls, and that the proper union of the cut edges of this fascia is the first essential in effecting cicatrization of the abdominal incision which shall be permanent. In most cases we probably include

this fascia whenever the sutures are inserted an inch from the edge, as was done in the operation for hernia which Dr. Chadwick reported.

After referring to other factors in preventing hernia, and the points of difference between the operation for hernia and abdominal incision, he described the technique of the operation in his case, in which the patient had been cured for five months; whether it would be permanent he was unable to say. He had been able to find full reports of only four cases, each done by a different method and all but one successfully.

Third Day—Morning Session.

DR. ROBERT BATTEY, of Rome, Ga., read a paper entitled

BATTEY'S OPERATION AND ITS NATURAL RESULTS.

His first operation was performed in 1872, and an account of it was published in the same year, which was widely spread and read. The first recognition of the operation was by Prof. A. R. Simpson, of Edinburgh, who in 1879 published a case of double oöphorectomy. Hegar published in 1878 an unsuccessful case in which he operated in 1872.

The author of the paper preferred to retain the term Battey's operation, since it expressed the object of the procedure (production of the menopause) better than the terms oöphorectomy, spaying, castration, etc.

Dr. Battey then presented a table of 54 cases; cured, 33; much improved, 8; little improved, 5; not at all improved, 8. Of the 54 cases there was complete menopause in 50; continued pseudomenstrues in 4.

The following conclusions were given:

1. Change of life is the most important factor in securing the complete results of the operation.

2. In a few cases the cure occurred at once, but in the majority the patient passed through various climacteric disturbances.

3. The time which elapsed between the operation and the disappearance of these disturbances varied from one to three or even five years.

4. Some of the cases reported were badly selected and should not have been operated upon. The proper selection of cases is a problem yet to be solved.

5. Patients addicted to opium, chloral, or alcohol must abandon the habits in order to be perfectly cured.

6. Cases proper for operation may, if allowed to suffer for years unrelieved, reach a stage when they will be incurable by any known means.

7. In a few cases intractable neuralgia in the ovarian stump resisted all treatment.

8. A careful analysis of the cases shows that the removal of the Fallopian tubes does not influence the production of the menopause or the final cure.

9. The operation is not infallible. The percentage of failures is large, but not more so than for many other operations.

DR. SUTTON, of Pittsburg, asked (1) if Dr. Battey's operation was the removal of the ovary, (2) was removal of the ovaries alone followed by the menopause in all except 4 of the 54 cases?

DR. A. REEVES JACKSON, of Chicago, remarked that Dr. Battey's paper showed one very important fact, namely, the utter uselessness of reporting the results of removal of the ovaries, one week, or two months, or two years after the operation. The tendency is to report the success of a case in all its aspects, at the first meeting of a medical society held, or in the first issue of some medical journal after the operation.

DR. A. R. SIMPSON, of Edinburgh, thought it was important to keep the attention fixed on the ultimate results. The patient on whom he operated was benefited and the benefit remains in that she never menstruated, was free from her monthly suffering, and at the same time remains in good health.

DR. BATTEY replied to Dr. Sutton's questions that the removal of the ovaries was not a necessary constituent of the operation. It was the *change of life* that he wished to establish, and not removal of ovaries. Removal of the ovaries does not invariably produce the menopause, nor does removal of the ovaries and tubes, nor still further, of the ovaries, tubes, and uterus.

DR. PARVIN, of Philadelphia, asked if the ovaries were invariably diseased which Dr. Battey had removed, and how frequently he found disease of the tubes?

DR. BATTEY replied yes to the first question, and to the second that the ratio was small. As a rule, he removes only the ovaries, but the tubes when they are diseased—that is, cases of pyo- or hydro- or hemato-salpinx; he does not remove the tubes on account of a little blush along the surface.

DR. LLOYD-ROBERTS, of Manchester, England, asked as to the condition of the uterus in the 54 cases.

DR. BATTEY replied that the remaining time of the meeting would be required to describe them all; they were all different, widely different from each other.

DR. POLK, of New York, asked Dr. Battey to state the condition or ovarian disease which demanded removal of these organs; that is, of those ovaries which have been supposed to have something to do with the neurotic condition of the patient.

DR. BATTEY replied that he did not operate for disease of the ovary. If the function of the ovary can be stopped, he believed that many of the patients will get well, and it was only to stop that function that he removed the organ. He had never insisted upon visible signs of disease of the ovary to justify the operation. It was only a collateral fact that the ovaries were diseased when removed.

DR. BANTOCK, of London, said he had always been under the impression that Battey's operation was the removal of perfectly normal ovaries.

DR. BATTEY was glad that this question had been raised, because he had been trying, during the last twelve or fifteen years, to get his brethren across the ocean to understand what his operation is. He always utterly disclaimed that his operation was removal of normal ovaries, and yet he had had it thrown in his face by his best friends. His object was to secure the *change of life*, and he did not care how this could be accomplished.

DR. A. W. JOHNSTONE, of Danville, Ky., read a paper on

THE INFANTILE UTERUS

and gave the following conclusions :

1. The uterus is not only an entirely independent organ, but it is made up of two parts, whose functions are entirely separate, and arrest of growth may occur in either or both.
2. From its exposed position, the growth of the cervix is much oftener interfered with than that of the body.
3. Congenital flexion is largely due to this arrest.
4. The arrested growth of the body nearly always means an interference with the proper development of the endometrium.
5. This immaturity of the endometrium prevents its progress to the myloid state necessary to the formation of the placenta, which means permanent sterility.
6. This interference is most probably due to some damage to the pelvic sympathetic.
7. Where there is a marked diminution in the body, the stretching of the neck is apt to result in little if any good.
8. When life has become a burden that is clearly due to an arrest of development, the menopause should be hastened, but not until we are sure nothing else can relieve.

DR. THEOPHILUS PARVIN, of Philadelphia, read a paper on

THE IMPORTANCE OF ANTISEPTICS IN PRIVATE OBSTETRIC PRACTICE, in which he urged their use, and exhibited a very compact pocket case which would facilitate the practical application of the principles involved in the method.

Dr. Aust-Lawrence, of Bristol, England ; Dr. A. R. Simpson, of Edinburgh ; Dr. W. L. Reid, of Liverpool ; and Dr. H. A. Kelly, of Philadelphia, spoke of the benefits of antiseptic midwifery, and of the means of carrying it into practice.

DR. ELY VAN DE WARKER, of Syracuse, N. Y., then read a paper on

EXTRAUTERINE PREGNANCY, AND ITS TREATMENT BY ELECTRICITY.

When the author of the paper read a recent contribution to this subject, in which it was stated that the five months' fetus was completely absorbed within three weeks, after having been killed by electricity, he concluded that the elementary literature had not been made complete, and, as a contribution to that end, he reported a case in order that the subject might again be discussed.

The sign which had seemed to him to be most reliable in decid-

ing whether or not the electricity had done its work completely was *lessened tension in the cyst*, a sign more easy of detection than *shrinkage* of the tumor.

DR. JOHN C. REEVE, of Dayton, O., said that twenty years ago it was pointed out that sudden attacks of violent pelvic pain attended by gushes of hemorrhage in pregnant women almost positively indicated the existence of extrauterine pregnancy. Since then it had been learned that the expulsion of decidual membrane is pathognomonic. So whenever these symptoms are present, you may be very sure that you have to deal with this condition. But all cases are not so clearly marked; the membrane may be cast off in shreds, etc., and then reliance must be placed upon other symptoms in reaching a diagnosis.

DR. A. MARTIN, of Berlin, recommended immediate removal of a pregnant tube by laparotomy.

DR. J. E. JANVRIN, of New York, favored very early resort to laparotomy in tubal pregnancy.

The discussion was continued by DRs. SIMS, of New York, CHADWICK, of Boston, APOSTOLI, of Paris, and MANN, of Buffalo, and was closed by DR. VAN DE WARKER, who regarded it as proved that galvanism is efficient and safe in these cases, and, therefore, that the woman should have its benefit first, to be followed by laparotomy if required. He believed that Dr. Apostoli's recommendation to puncture the sac was more dangerous than laparotomy.

Third Day—Afternoon Session.

DR. FRANK P. FOSTER, of New York, read a paper on

VAGINAL INJECTIONS IN SIMS' POSTURE.

The extent to which vaginal injections of hot water have come into use in this country, and the common consent accorded to their efficiency, is sufficient proof that their importance is not in need of argument. It is questionable, however, that all the benefit is derived from them which they are capable of rendering. The main desiderata are penetration of the water to a situation as closely contiguous as possible to the seat of the disease, and its application in sufficient quantity at a time to secure the maximum action of the heat. To answer these requirements, he had employed the injections with the patient in a posture somewhat more prone than Sims'. It is evident that, when a vaginal injection is administered with the patient in the dorsal posture, the amount of water contained in the vagina at any one time is decidedly smaller than that which is required to fill the canal when it is distended by atmospheric pressure, as takes place when the patient is in Sims' posture. The great advantage to be derived from this method is the fact that the gravitation of the abdominal and pelvic contents towards the diaphragm brings the vaginal vault, and consequently the water contained in the vagina, into closer relation to the diseased parts than is likely to be the case when the dorsal posture is made use of. With the

vaginal douche (which Dr. Foster described several years ago, no inconvenience is experienced in carrying out the procedure.

DR. BARKER, of New York, suggested the use of Cleveland's rubber bed-pan as an aid in carrying out Dr. Foster's method.

DR. CHARLES JEWETT, of Brooklyn, read a paper on

THE TREATMENT OF PUERPERAL ECLAMPSIA,

in which he set forth especially the merits of *veratrum viride*, administered hypodermically. He regards the use of a reliable preparation as not only safe, but a peculiarly efficient means of controlling the convulsions. The most remarkable effect of the drug is to reduce the frequency of the heart's action and lower arterial tension. To accomplish this, it is never necessary to push the drug to the production of a dangerous degree of prostration in eclampsia. Prostration may be produced, but from it the patients will rally, and there is no recorded case of fatal result from the drug in convulsions. Dangerous symptoms are said to supervene when the patient assumes the erect posture while under the full influence of *veratrum*. It is important, then, to keep the woman in the recumbent posture while under treatment.

No convulsion will occur while the pulse is below sixty per minute, and the patient under the influence of the drug; and to accomplish this reduction in the frequency of the pulse, Dr. Jewett recommends from ten to twenty minims. The smallest dose can be given, and if no effect is produced at the end of half an hour, it can be repeated. His experience in twenty-two cases seemed to show that in *veratrum viride*, when given early, we have a well-nigh certain means of preventing death by eclampsia. *Veratrum viride*, however, he did not advocate as an exclusive reliance in puerperal convulsions.

DR. FORDYCE BARKER, of New York, introduced the use of this drug into New York nearly forty years ago. His first published papers on its use were over thirty years ago in connection with a discussion held with Dr. Clark. In a certain book, also, he had expressed his views largely on the efficiency of *veratrum* as an arterial sedative. The selection of a reliable preparation was a very important point in the use of the drug.

The discussion was continued by DR. A. F. A. KING, of Washington, who was pleased with the recommendation of *veratrum* as a remedy for eclampsia, because, in the first medical paper which he ever read, he suggested its use from theoretical considerations, and that was more than twenty years ago.

DR. JEWETT said that he should say a word in closing, partly in self-defence, as his paper contained full reference to all the literature consulted, where full credit had been given to Dr. Barker's writings, to whom we all were indebted for all we knew concerning the use of *veratrum* in puerperal conditions.

DR. REYNOLDS, of Boston, offered a resolution expressing the high appreciation to the Fellows of the delightfully kind part which had been taken in the meeting by our foreign friends.

Dr. Graily Hewitt, of London; Dr. A. R. Simpson, of Edinburgh; Dr. Lloyd Roberts, of Manchester, England; Dr. Balls-Hadley, of Melbourne, Australia; and Dr. Cordes, of Geneva, Switzerland, made happy responses, and

THE PRESIDENT said that he could most heartily indorse all that had been spoken by the distinguished Fellow from Boston, concerning the visit of our foreign brethren.

Officers for the ensuing year:

President, Robert Battey, M.D., of Rome, Ga.

Vice-Presidents, James R. Chadwick, M.D., of Boston, and A. Reeves Jackson, M.D., of Chicago.

Secretary, Joseph Taber Johnson, M.D., of Washington.

Treasurer, Matthew D. Mann, M.D., of Buffalo.

Other Members of the Council, Frank P. Foster, M.D., of New York; C. D. Palmer, M.D., of Cincinnati; James B. Hunter, M.D., of New York; and R. Stansbury Sutton, M.D., of Pittsburgh.

New Members, Drs. Howard A. Kelly, of Philadelphia; Horace T. Hanks and Bache McE. Emmet, of New York; and Cornelius Kollock, of Cheraw, S. C.

The next meeting will be held in the city of Boston, beginning on the *third Tuesday* in September, 1888.

The proposition to become a part of the American Congress of Physicians and Surgeons was rejected.

INTERNATIONAL MEDICAL CONGRESS.

HELD IN WASHINGTON, D. C., SEPTEMBER 5TH, 6TH, 7TH, 8TH,
9TH, AND 10TH, 1887.

SECTION IN OBSTETRICS.

Monday, September 5th—First Day—Afternoon Session.

DE LASKIE MILLER, M.D., PH.D., Chicago, Ill., *President.*

PRESIDENT'S ADDRESS.

DR. MILLER extended cordial greeting and fraternal welcome to the distinguished guests present, and spoke of his appreciation of the labors of those connected with the Section. The physician's labor was for the good of humanity, and all his achievements and

inventions of utility, being generously added to the stock of general knowledge, would be ever preserved, for they became the property of the world. New rules and new applications were constantly arising; yet what rules, new to us, had been ages ago applied. We sought truth along ways beset with difficulties. A symptom might be accepted for a fact in pathology, while nothing was more variable—hence our deductions were liable to prove faulty. Yet no cavity should be too deep to deter us from direct investigation. We should not expect too much, and be not disappointed to find certain questions no nearer solution than they were one hundred years ago.

¶ In speaking of certain obstetric difficulties, Dr. Miller hoped that craniotomy in contracted pelvis would be but rarely adopted and only in exceptional cases. It was too frequently assumed to be without danger to the mother. The inference from his researches was that the maternal mortality exceeds that reported. Under the new régime the interests of the child became more important. The requisite skill for other operative interference could now be found nearly everywhere.

In ectopic gestation diverse views on treatment prevailed. We have need of more concise rules. He considered early diagnosis of the greatest importance, and then *electricity* to arrest vitality.

While endeavoring to render the puerperal state aseptic, we should not fail to remember the danger from the ordinary agents used, especially where the kidneys were impaired, and he would not employ them in ordinary cases. Cleanliness was a most valuable means of asepsis.

In medicine we tolerated innovation and welcomed progress. We accept that which is fortified by experience and justified by results.

A paper sent by J. BRAXTON HICKS, M.D., F.R.S., of London, England,

ON THE CONTRACTIONS OF THE UTERUS THROUGHOUT PREGNANCY,
AND THEIR VALUE IN THE DIAGNOSIS OF PREGNANCY, BOTH
NORMAL AND COMPLICATED,

was then read.

Fifteen years ago the author had first directed attention to the fact that the uterus contracted throughout pregnancy at intervals of from five to twenty minutes; since then he had added much to his previous knowledge.

Before the fourth month bimanual palpation was necessary, later external examination was sufficient for its detection. The pregnant uterus was very soft, and offered no appreciable resistance to palpation except during contraction. In a young girl suspected of pregnancy abdominal palpation was often all-sufficient, though internal examination might be necessary. It was of great advantage to obtain decisive proof before making any allusion to

pregnancy. A soft condition of the uterus, with a localized lump, often pointed toward the death of the fetus or to ectopic gestation. The uterus might contract about fibroids. A knowledge of the contractions often rendered easy a diagnosis otherwise difficult, as in ovarian tumor, ovarian tumor and pregnancy, ectopic gestation and normal gestation, twin pregnancy and hydramnios (palpation and the stethoscope as aids). With a dead fetus the walls might be rigidly contracted. We should always look for corroborative signs.

Several cases were then cited in which the diagnosis was rendered certain only by this sign. The conclusions were:

1. That the uterus contracted at intervals of from five to twenty minutes during the whole of pregnancy, remaining contracted for from three to five minutes.
2. The uterus is firm when contracted, and the fetus cannot be distinctly felt, though when the uterus is soft the fetus is easily mapped out.
3. By noticing the contractions we are often enabled to diagnose normal pregnancy from other conditions.
4. The contractions have the physiological use of emptying the uterine veins of the carbonized blood.
5. The carbonized blood probably excites the contractions.

DR. ALEXANDER SIMPSON, of Edinburgh, Scotland, thought the phenomenon of uterine contraction during pregnancy was now a widely recognized fact. We often meet cases requiring all our diagnostic skill, and should employ all known means.

The sign mentioned was especially valuable before the fetal heart-sounds could be distinguished, and in the third month when it could be employed in addition to Hegar's sign. One important result of these contractions was that when the uterus contracted forcibly, its contained blood was suddenly emptied into the surrounding parts, distending them, and thus favoring dilatation of the parturient canal.

DR. A. F. A. KING, of Washington, D. C., said there was sometimes difficulty in recognizing the contractions of the uterus, as they might be excited by polypi, by the retention of menstrual fluid, or by fibroids. They were principally of value after the third month. During the first and second months we had no positive means of diagnosis. In single women the diagnosis of pregnancy could not be certainly made by uterine contractions alone. An important point in searching for this sign was to irritate the uterus slightly to make it contract.

PROFESSOR CHARPENTIER, of Paris, France, appreciated thoroughly the value of Dr. Hicks' sign, and related a case of hydramnios where its presence made the diagnosis possible.

DUNCAN C. MACCALLUM, M.D., M.R.C.S. Eng., of Montreal, Canada, read a paper on

VICARIOUS MENSTRUATION.

After a *resumé* of the literature of the subject and the diverse opinions of modern authorities, the reader cited four cases:

- 1st. Mrs. W—, aged thirty-eight; six children. Never

nursed. Good health. Two months after birth of child had molimina and vomited blood. Treated by rest, ice, and gallic acid. No unpleasant after-effects and no further hemorrhage for four weeks, when she again had molimina followed by hematemesis. At next period the menses reappeared and have been normal since. Continued good health.

2d. Healthy woman; single. On the first day of a menstrual period was exposed to cold, and menses stopped; next day vomited blood; no vaginal discharge, regular since and healthy.

3d. Patient, aged thirty-three; healthy. First menstruation at fourteen years of age. Soon after had scarlatina, followed by amenorrhea until eighteen. At twenty-three menstruation became very scanty and was accompanied by epistaxis for six periods, when it became regular again. Recently has again become scant and is accompanied by the epistaxis as before.

4th. Healthy woman. Pregnant three months. Six weeks before had received a severe fright. Had a profuse hemoptysis on two successive mornings, and three days later aborted. Four weeks later molimina and hemoptysis, but since normal menstruation. Chest perfectly sound; good health. In this case the ovum was killed six weeks before ovulation became established, and obstruction being offered to the usual flow, hemorrhage took place from the weakest point.

To constitute vicarious menstruation there must be (a) absence of menstrual blood-flow, (b) blood from some other organ than the uterus, and, (c) no other assignable cause for the hemorrhage than the increased premenstrual blood-tension.

A hemorrhage under these conditions is truly supplementary and clearly vicarious.

DR. CHARLES T. PARKS, of Chicago, Ill., mentioned a case occurring in a single woman, twenty-three years of age, sick eighteen months. For four months defecation had been at intervals of from one to seven weeks, and during this time only one ounce of urine had been passed daily. Severe fecal vomiting. No normal menstruation for two months, but at the time for the periods molimina and vomiting of pure blood. Patient was a physical and mental wreck. Exploratory abdominal incision showed intestines filled with scybalæ. The ovaries, much enlarged, were removed. Urine at once increased to a pint daily, many scybalæ were passed, and general health rapidly improved. For two periods the patient had molimina and spat blood. Heart and lungs normal.

DR. OPIE, of Baltimore, Md., thought cases of vicarious menstruation rare and ill defined. He believed that when the menstrual flow was impeded the vascular tension would seek relief at the weakest point.

DR. NELSON, of Chicago, Ill., recalled a case where bleeding from rectal hemorrhoids occurred at menstrual periods, there being no uterine flow. The piles being cured and the cervix dilated, the menses appeared and gradually became normal.

DR. RODNEY GLISSAN, of Portland, Ore., in thirty-nine years

had seen three cases; in one, menstruation had been regular, but after a serious illness hemoptysis appeared every month and no vaginal flow for a year, when menstruation again became regular and the cough ceased. Now healthy.

PROFESSOR T. LAZAREWITCH, M.D., of St. Petersburg, Russia, presented a paper on

THE MECHANISM OF LABOR AND THE NORMAL FORCEPS.

After calling attention to the factors concerned in the mechanism of labor, and the necessity of an accurate knowledge of the mechanics of the process, he described a forceps which he had devised, having straight parallel blades, and locking with a simple tenon and screw.

His conclusions were: 1. That forceps be considered as a continuation of the hand as feelers. 2. That the less the dimensions of the blades the better they could be guided. 3. That detrimental action increases with the size of the blades. 4. Convex margins should not be so thin as to cut, or so thick as to obstruct. 5. That the instrument should lock easily, but allow slight longitudinal rotation of the blades. 6. Blades should be parallel. 7. Handles designed for convenience in guiding and the avoidance of injurious pressure. 8. Should be of smooth metal, so as to be easily made aseptic. 9. That the pelvic curve was injudicious, detrimental, and difficult to employ. 10. That his parallel normal forceps filled all these conditions.

W. S. STEWART, M.D., of Philadelphia, Pa., exhibited an

IMPROVED FORCEPS WITH PARALLEL BRANCHES.

The advantages claimed are: 1. That either blade may be applied first. 2. The impossibility of its slipping when properly applied. 3. Moderate and even compression, the degree of compression being regulated by the amount of resistance. 4. Great facility for making traction.

DR. OPIE thought that most forceps had merit in proportion to the skill and familiarity in their use by the individual operator. It was not so much the instrument as the man. We should not try to do by mechanism what the skilful hand may execute. A properly educated touch and hand were the best means of warding off dangers incident to the use of the forceps. He believed in the use of a moderate pelvic curve.

Tuesday, September 6th—Second Day—Afternoon Session.

DR. JAMES C. CAMERON, of Montreal, Canada, read a paper entitled

THE INFLUENCE OF LEUKEMIA ON PREGNANCY.

In this he showed, by a *resumé* of the literature, how incomplete our knowledge of the subject still was. We knew that cases were most frequent in women, especially during pregnancy or at the climacteric. Its effect upon the reproductive organs was but

little known, and barely mentioned in any work. The disease was apt to begin during the latter part of pregnancy, and indeed, in many of those who became sallow and anemic during pregnancy, though only temporarily so, the ratio of white to red blood-corpuscles was much increased.

The case which he reported was unique, in that pregnancy recurred successively during the progress of the disease, and was also interesting in showing a marked hereditary tendency—the parents of the patient and her six children being all leukemic. The splenic tumor was first noticed during a pregnancy, and increased markedly in size during each successive gestation, the disease running a remarkably chronic course. A fact worthy of note was, that the red blood-corpuscles of a child born when the disease was well marked were in the normal proportion in the vessels of the child, even above the normal in the placental artery, but much diminished in the placental vein, showing that the blood actually lost red corpuscles while passing through the placenta. In the placental sinuses the red globules were fewer than in the general circulation of the mother.

DR. CHARLES WARRINGTON EARLE, of Chicago, Ill., recalled two cases of extreme anemia, together with great emaciation, occurring during pregnancy, and which at the autopsies were found to be caused by chronic inflammation of the pancreas, all other organs being normal. The pancreas was white and hard, the microscope showing a great increase in the connective tissue. He thought that this condition might explain some cases of pernicious anemia, and proposed for it the name of pancreatic anemia.

PROFESSOR A. CHARPENTIER, of Paris, France, read a paper entitled

L'URÉMIE EXPÉRIMENTALE.

In this he detailed the results of certain experiments made by him on the artificial production of uremia in gravid animals, by the injecting into the blood, at intervals, of urea until it was present in excess. In these cases the death of the fetus preceded that of the mother, and the quantity of urea in its veins was in excess of that in the mother's. The death of the fetus was caused by this excess of urea in its circulation.

DR. WILLIAM T. LUSK, of New York, thought the paper illustrated a most important point. The explanation of the manner of death of the fetus was certainly ingenious. He had supposed that its death was due to the presence of carbonic dioxide in the blood of the mother.

DR. DUNCAN C. MACCALLUM, of Montreal, Canada, said that in marked albuminuria, with severe symptoms, we were justified in inducing premature labor, and if the death of the child was apt to occur, as had been shown, it was another strong reason why we should not delay too long.

DR. ALEXANDER R. SIMPSON, of Edinburgh, Scotland, read a paper giving the results of his efforts to secure

UNIFORMITY IN OBSTETRICAL NOMENCLATURE,

presenting a schedule showing the proposed changes, and detailing some of the opinions he had received from eminent obstetricians. The subject had been opened at the Eighth International Congress, and he hoped this one would take some definite action in the matter.

A committee, consisting of Drs. Miller, Simpson, Lusk, and King, was appointed to consider the matter, and report on Friday, the 9th inst.

DR. WILLIAM T. LUSK, of New York, presented a most scholarly paper on

THE PROGNOSIS OF THE CESAREAN SECTION.

If it were proposed to beat out the brains of a living child, the suggestion would be received with horror, no matter how great the surgical emergency might be, and yet, with the child unborn, craniotomy was often done for insignificant reasons. A careful *résumé* of the statistics showed very favorable results, even with the old method, when the surroundings were favorable and the operation was performed with proper surgical skill and accessories. Death was most often the result of an avoidable cause. The reader compared the brilliant results obtained abroad with the mortality attending recent American operations, and thought that a more favorable prognosis could not be expected until we had learned to recognize the conditions requiring the operation before the time when it should be done.

Defective diagnosis was the great bar to progress in this country, and all practitioners should qualify themselves to recognize the various degrees of pelvic deformity. An operator should possess at least a theoretical knowledge of the technique of the procedure, and while it was not desirable that any one should attempt to perform the section, men capable of doing the operation could usually be found, even out of the larger cities.

The paper closed with a plea for Cesarean section as opposed to craniotomy, even in pelves with a conjugate of three inches.

DR. M. SAENGER, of Leipsic, Germany, presented a paper on

THE CESAREAN OPERATION,

which was read in abstract.

Sänger's operation was to be preferred to the Porro when the child was living and could not be delivered by any other operation, or when the child was dead and could not be delivered by craniotomy or embryotomy, or could be so delivered only with the greatest danger to the mother. Good results could be obtained by the Cesarean section only under certain conditions and when the operation was performed according to certain approved technical principles. These conditions are : 1. The maintenance of an aseptic condition in the uterine cavity, and, 2, early performance of the operation.

Sänger thinks that the cause of the greater American mortality is delay, and only trying the section when other operations have been unsuccessful. He lays stress on the following :

1. Antiseptic precautions as in other laparotomies.
2. The abdominal incision should be made through the linea alba over the middle of the fundus, about sixteen centimetres long.
3. It is not advisable to evert the unopened uterus, as it requires a large incision, except where the fetus is dead or there are not sufficient assistants.

4. The elastic ligature is not to be used before the uterus is opened, as it endangers the life of the child, or may incarcerate parts of the child, so that it may have to be loosened at a time when the operator requires his hands for more important matters.

5. Open the uterus in situ, by a frontal median incision ; cut through placenta, or push it to one side ; extract child by the legs ; if head is caught, extend incision upward, to prevent any downward laceration of the uterus. At same time, assistant is to press abdominal walls toward uterus to prevent prolapse of intestines or flow of fluid into the abdominal cavity.

6. The danger from hemorrhage is not so great as is commonly supposed. By pressure on the inferior segment, and by slight torsion or flexion of the uterus and broad ligaments, the bleeding can be much lessened. Do without elastic ligature if possible.

7. Care must be taken in regard to three points in suturing :
1. Accurate union of the incised surface of the uterus by numerous sutures, whereby a broad and close union is obtained. 2. Avoidance of suture-canal in the uterine cavity. 3. Especially careful union of the serous surfaces. Silk is preferred to silver-wire, because silk can be absorbed. Excellent results can be obtained with catgut prepared in oil of juniper, chromic acid, or mercuric bichloride.

Sänger's indications for the Porro operation are : When the flow of secretion from the uterus is impeded by stenosis of the cervix or vagina, or, in some cases, of tumors of the corpus uteri, myomata, etc. He prefers Cesarean section where the myomata are retro-cervical or retro-vaginal, because the removal of the whole mass is then impossible or dangerous and the removal of the uterus does no good. In osteomalacia he prefers the Cesarean section with removal of the ovaries to the Porro operation. He takes exception to Martin's recommendation to do the Porro operation in cases in which the puerperium becomes dangerous to the patient, as in far-advanced affections of the heart or lungs. He thinks such a case has as good a chance of recovery after Cesarean section as after Porro's operation.

DR. W. H. WATHEN, of Louisville, Ky., read a paper on

ABDOMINAL SECTION FOR REMOVAL OF THE FETUS.

He urged that abdominal section should be done in all cases, instead of craniotomy, where the child was living. Craniotomy was often unnecessarily done. The maternal mortality was not greater in selected cases of Cesarean section than after craniotomy. In moderate degrees of pelvic contraction we should induce premature labor, if the condition was discovered early. Abdominal section should become an operation of election and not a last resort. The uterine sero-serous suture and careful toilet of the peritoneum were indispensable.

Wednesday, September 7th—Third Day—Morning Session.

DISCUSSION ON CESAREAN SECTION.

DR. ALEXANDER SIMPSON, of Edinburgh, Scotland, was in accord with the ideas expressed in Dr. Lusk's paper, though he did not think the time yet come when craniotomy could be entirely laid aside; its performance, however, should be restricted. In Edinburgh pelvic deformity was rare and craniotomy was rarely required.

The cases requiring abdominal section could be divided into two groups—first, those where the prognosis was rendered grave by pre-existing inflammatory conditions or sepsis, and, second, those favorable cases where we could choose the moment and place of operation, when we should nearly always succeed. At present he would be bold who would perform Cesarean section by other than the Säger method. Where the uterus was diseased and its removal would give the patient a chance, he would employ Porro's method.

DR. AUGUST MARTIN, of Berlin, Germany, considers the Säger modification very important, and one which has rendered the operation safe. Since the adoption of this modification the section had been done in some cases where he thought version could have been safely performed. In moderate degrees of pelvic contraction we should ascertain whether delivery could not be effected in other ways, as by version, before performing the section. He had done the Cesarean in pregnancy complicated with cervical myomata. Säger had operated in similar cases. Where carcinomata of the organs in the pelvis endangered life we should endeavor to deliver child and remove growth at the same time. When the uterus was infected by septic material it should be removed. In a rachitic, kyphotic woman, with heart and lung disease, the symptoms were so grave that he did not think the woman would stand normal parturition or the puerperal state; accordingly he had done abdominal section, saving both child and mother, who finally died from her lung trouble. Much depended upon our knowledge of the technique; if we succeeded in doing the operation perfectly, either the Säger or Porro operation was justified. The statistics of the Porro operation were rendered less favorable by Italian operations done on unfavorable subjects who were septic and in whom the operation was too long delayed. The Cesarean section always gives us hope of perfect recovery, while the Porro operation prevents future maternity.

Abdominal section is indicated when it seems impossible to

bring a living child through the pelvis (take care not to operate too soon); when neoplasms narrow the channel or endanger the progress of parturition; and when diseases are present in which the life of mother and child would be endangered by the process of parturition or the puerperium.

The Cesarean section should be done when we have reason to believe that the patient can endure another pregnancy; the Porro operation, or total extirpation, when there is no hope of future maternity or where the disease, from its nature or seat, is probably fatal.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., reiterated the opinions expressed by Drs. Lusk and Wathens. He believed that by delay and the attempt to perform other operations many lives were lost. He advocated the Porro operation when the uterus was septic or bruised. The wonderful results of foreign operators were due to their exceptional opportunities and skill, the operations being done by a few men, while here the operators were scattered, and many operations had been done in the backwoods. He thought that soon American surgery would reap as brilliant a reward as that abroad.

DR. BALLS-HEADLEY, of Melbourne, Australia, advocated the Cesarean section when the child could not be born alive through the natural passages. There were also certain conditions, as carcinoma of the cervix, where other operative interference would allow the child to be born, but in these cases his experience taught him that the Cesarean section offered a very much better prognosis. The operation was an easy one. In slight pelvic contraction the section gave good results. We should operate early, or, if the parts were bruised, substitute the Porro operation.

DR. DOLERIS, of Paris, France, accorded with the views of Lusk and Martin. He believed in the use of the elastic ligature.

DR. W. W. JAGGARD, of Chicago, Ill., said, with reference to the relative indication for Cesarean section, that in cases where the child could pass *per vias naturales*, when diminished in volume, with safety to the mother, as, for example, in pelvic contractions of from six to eight cm. in the true conjugate, four considerations should receive attention:

1. Craniotomy does not require a higher degree of operative skill than every qualified obstetrician ought to possess, when proper instruments are employed, *e. g.*, Braun's curved trepan and cranioclast.

2. The mortality of craniotomy, when performed in time, and before exhaustion and infection of the woman, with adequate skill and antiseptic precaution, is, as remarked by Barnes, practically nil.

3. The consent of the woman, obtained without direct or indirect coercion, an essential condition of the relative indication, is seldom gained if facts be presented to her.

4. That there is much sentimentalism with reference to the value of the life of the child in utero, as compared with the value of the life of the mother. This interest in the child is purely impersonal and scientific. The delight in saving the child's life is frequently that arising from the success of a difficult scientific experiment.

DR. WILLIAM T. LUSK, of New York, said that the points made by Dr. Jaggard were opposed to his recent investigation. With

skill we could remove a living child where the contraction was only 7 to 10 cm. Craniotomy was a dangerous operation, and, under three inches, required much skill and good instruments. He believed the Cesarean section not more dangerous than the extraction of the child after craniotomy.

In his recent case the operation was done in the open ward, with the same preparations as for other laparotomies. The children, according to his researches, did not die, as general opinion would have it. The Cesarean section was easy to do. He thought there was danger, in the employment of the elastic ligature, from paralysis and inertia, caused by the compression. We did not want to encourage trying craniotomy and then Cesarean section, but should make the latter the operation of election. Most of our cases had been done under circumstances which had rendered death inevitable.

Afternoon Session.

DR. J. A. DOLÉRIS, of Paris, France, presented a paper on the
TREATMENT AND SURGICAL RESTORATION OF THE CERVIX DURING
PREGNANCY.

He first described a case where at a previous pregnancy the cervix had been very extensively lacerated. The patient was again several months pregnant, and suffered from a profuse, fetid, probably gonorrheal discharge. There was severe vaginal pain, and the cicatrix of the cervical laceration was very painful when touched. Preliminary treatment did not relieve the patient and the cervix was sewed, four sutures being placed on either side, and the vagina filled with iodoform gauze. The result was excellent, with no interference with the pregnancy. This was only one of several similar cases where he had operated successfully. A severe laceration accompanied by profuse and fetid discharge was very distressing, and might lead to abortion or puerperal fever. He thought the danger of producing abortion by the operation was exaggerated, and that in the class of cases mentioned produced good results.

DR. OPIE, of Baltimore, recalled a single case where a severe bilateral laceration of the cervix had been operated upon; the woman proved to be pregnant and aborted on the sixth day. There was objection to any operation about these parts during pregnancy, especially early pregnancy. Cervical operations were not without their especial dangers at this time, and should be but rarely done.

PROFESSOR LEISHMAN, of England, said that preconceived opinion was that operations about the cervix were likely to produce abortion, especially when not done by the most skilled hands. Any operation during pregnancy, and this in particular, should be done only in rare and strictly defined cases.

DR. DOLÉRIS responded that he had not advised the operation except in the well-defined cases he had mentioned, and in which he thought it would rather tend to prevent abortion.

DR. JOSEPH KUCHER, of New York City, read a paper

ON THE RELATION OF THE ATMOSPHERE TO PUERPERAL FEVER.

He spoke of the importance of pure air in the lying-in room, and put the question: What influence has an impure air on puerperal fever? A consideration of the literature and statistics of the subject shows that the malaise of dissecting rooms is more due to impure air than to absorption of septic material, and that true sepsis occurs only by inoculation through an open wound.

Overcrowding does not necessarily cause puerperal fever when septic infection is prevented. Pure air undoubtedly allows of more rapid convalescence; bad air depresses and allows the more easy access of septic infection; sepsis does not occur from bad air alone, but only from direct contact with septic matter.

DR. THOMAS MORE MADDEN, F.R.C.S. Ed., of Dublin, Ireland, sent a paper

ON THE PREVENTION AND TREATMENT OF PUERPERAL SEPTICEMIA,
which was read by the Secretary.

The author considers all forms of septic fever consequent on parturition, and occurring within the puerperal period, as various manifestations of a specific puerperal fever. Puerperal sepsis may originate in three ways, viz., from inoculation with the micrococci of clinically allied diseases, such as erysipelas or scarlatina; from infection by the pathognomonic, chain-like micro-organisms evolved by other puerperal fever patients; or the disease may arise from auto-infection with self-generated septic matter. Although absolute immunity from puerperal fever must be considered hopeless, its prevalence may be much diminished and its virulence minimized by the rigid observance of certain precautionary antiseptic and hygienic measures.

For prophylaxis, the author strongly recommends the administration, during the latter months of pregnancy, of the chlorates of iron, potash, and quinine. Strict attention to the patient's local and general hygienic and aseptic condition is insisted upon. The author uses a carbolyzed intrauterine douche daily throughout the puerperium, together with large doses of ergot for the same time.

In the treatment of puerperal fever he relies primarily on the maintenance of the patient's strength by suitable nourishment and stimulants; secondly, on the daily washing out of the uterine cavity with hot water, plain or medicated; thirdly, on full doses of quinine and turpentine—which latter drug he believes to be especially valuable in every form of puerperal fever.

DR. CHARLES WARRINGTON EARLE, of Chicago, Ill., presented
A STUDY OF CERTAIN QUESTIONS IN CONNECTION WITH PUERPERAL FEVER, WITH PARTICULAR REFERENCE TO THE USE OF THE INTRA-UTERINE DOUCHE AND CURETTE.

After a discussion of various theories, he concluded that puer-

peral fever was in every instance produced by infection from without. There was no such thing as autogenetic infection. No one could now disbelieve the germ theory. Experience had shown that it was impossible for decomposition to occur without the presence of bacteria. There were many ways and many forms of infection. In a larger number of cases than we would suspect, *débris*, bits of placenta, decidua, etc., were left in the uterine cavity, which were, in our present modes of practice, infected by the patient, nurse, or doctor.

The only rational treatment was to remove all decomposing material, and prevent a local poison from invading the entire system and producing general sepsis.

Any marked rise of temperature in the puerperal woman should be investigated, and, if not plainly due to other causes, the genital tract should be suspected. A vaginal and uterine douche not reducing it, the uterus should be curetted, using a large, blunt instrument with all antiseptic precautions and great gentleness; the curetting to be followed by an intrauterine douche to carry away all loosened shreds.

The author cited many cases where the curetting had been done with the most gratifying results, and in no case did he know of any harm resulting from it. He did not wish to be understood as advocating the indiscriminate use of this measure, it being indicated only in those cases where the high temperature persisted after an intrauterine douche, when it was extremely valuable.

DR. R. LOWREY SIBBET, of Carlisle, Pa., read a paper on

THE PREVENTION OF PUERPERAL FEVER.

The contagium was always from without, and was never autogenetic. It was carried always by the medical attendant or nurse. Aseptic cleanliness on their part was the best prophylaxis. He had always kept a disinfectant on his washstand, and had never lost a case of puerperal fever. He did not believe in the intrauterine douche in private practice; it was dangerous, and could not be trusted to an unskilled nurse.

DR. DOLERIS, of Paris, France, thought that in practice we were ahead of theory. He used the douche and the curette, or the milder intrauterine brush, in cases such as Dr. Earle had indicated. He had used these measures with the very best success in many cases, from the second to as late as the seventeenth day.

Thursday, September 8th—Fourth Day—Morning Session.

DR. ALEXANDER SIMPSON, of Edinburgh, Scotland, occupied the chair—Dr. Miller being called away by a death in his family. The Section passed resolutions of condolence and sympathy.

DR. EMIL POUSSIE, of Paris, France, read some remarks on a case of

TYPHOID FEVER IN THE PUERPERAL WOMAN.

Seven days after labor, grave symptoms of true typhoid fever appeared, the disease running its course and the patient recovering. The report was made to call attention to the importance of distinguishing typhoid in the puerpera, from septicemia.

DR. ALEXANDER SIMPSON called attention to the importance of distinguishing the various forms of puerperal fevers. In Edinburgh he saw many cases of typhoid after labor; these were sometimes difficult to differentiate from ordinary sepsis, sometimes distinct and with a clear history of sewage-infection. He had seen scarlatina and measles after delivery simulating septicemia. These diseases in the puerperal woman were apt to prove fatal before their full development.

DR. GRAILY HEWITT, F.R.C.P., London, England, thought that the great advance in the treatment of puerperal fever in late years consisted in means tending to prevent the introduction of septic material into the blood. Women in whom the uterus did not remain firmly contracted were the most liable to contract puerperal fever. The uterus was the seat of entrance of the poison, and in private practice the best safeguard was to keep the uterus firmly contracted. Keep the patient in as good general health as possible during the latter months of pregnancy, feed her soon after labor and keep up her strength, for where there were weakness and debility the uterine contractions were apt to be imperfect. He used antiseptic precautions and vaginal injections, with the uterine douche in appropriate cases. When the germs had once gotten into the connective tissue about the uterus, douching did no good. He insisted upon the necessity of free passage for the return flow, and advocated Budin's double-tube, which he had had made of glass, as it was then more easily examined and kept clean. In general treatment keep up the uterine contractions by various means, nourish the patient, and use stimulants *freely*.

DR. JONES, of Danville, Ill., had never had a case of puerperal fever in his own practice. He had always used careful antisepsis, employing the mercuric bichloride, or oil of turpentine, which he considered a most excellent antiseptic. The uterine douche was a most valuable agent. Keep yourself clean.

DR. W. W. JAGGARD, of Chicago, Ill., would treat the uterus when mild infection had already begun. He vigorously protested against Madden's use of the douche daily, and was more in accord with the Vienna school, where the uterus was washed out thoroughly with a weak (two and one-half per cent) carbolyzed solution, and a bacillum of iodoform weighing from sixty to seventy grains introduced. No more interference was needed. The douche was not repeated, save in exceptional cases. There was no danger from iodoform poisoning.

DR. J. F. Y. PAINE, of Galveston, Tex., in twenty-four years had had but one case of puerperal fever. The best prophylaxis was to secure firm contraction of the uterus and remove clots. The uterine douche was meddlesome and hurtful in the great majority of cases. Cleanliness, rest, quiet, good air, and good diet were all that was necessary. Quinine and iron might be given in some cases.

DR. D. T. NELSON, of Chicago, Ill., mentioned a very grave

case of puerperal septicemia where sulphuretted hydrogen gas was used, as in Bourgeon's method in phthisis. At first the symptoms became more favorable, then diarrhea set in. The treatment was continued cautiously, but rectitis and hemorrhage appeared, and the patient died. Here, at first, the treatment aided, but later, no doubt, hastened her death.

In a second case, in the third week of typhoid fever, a miscarriage occurred at the third month. The fever became septic, with a characteristic scarlatinal rash. The same treatment was used, employing the gas in smaller quantity, and with immediate amelioration and recovery.

DR. WILLIAM T. STEWART, of Philadelphia, Pa., indorsed Dr. Hewitt's views, and thought the liquor sodæ chlorinata, $\frac{5}{3}$ ij. to O ss., the best for vaginal douching.

DR. LLOYD ROBERTS, of Manchester, England, used quinine, irrigation, and the curette when necessary. Mild cases would get well without treatment. He did not agree with Dr. Sibbett that the doctors and nurses so often carried the disease. He considered the mercuric-bichloride douche dangerous when strong: calomel was used successfully forty years ago. Could it not have had an antiseptic action?

DR. CAMERON, of Montreal, Canada, did not think we could treat the disease intelligently until we realized that purperal fever and purperal septicemia were synonymous. There was no such thing as auto-infection: endosepsis was a pernicious myth. His views were in accordance with those of Jaggard. Antiseptic precautions were to kill or to prevent the entrance of germs. There was a very general lack of knowledge as to when or how to use antiseptic measures. The douche and curette were valuable in the right place, but harmful in others.

When you have used the douche, iodoform, and the antiseptic pad, why use other local measures? You have sterilized the canal. Food, stimulants, rest, and iron were important. There was no specific treatment. Each case should be studied. Local conditions required local treatment, general states general treatment.

DR. CHARLES WARRINGTON EARLE, of Chicago, Ill., believed in adopting absolute antiseptic precautions beforehand. If possible, have clean, intelligent nurses. Look for the cause of the sepsis; if in the uterus, clear it out and patient would recover.

DR. RODNEY GLISAN, of Portland, Ore., presented a paper on

CONSERVATIVE OBSTETRICS; WITH SPECIAL REFERENCE TO THE REMOVAL OF THE SECUNDINES AFTER ABORTION, AND TO THE TREATMENT OF THE THIRD STAGE OF LABOR.

He thought that the expectant method of treating retained secundines after abortion and the placenta after labor was unsafe in private practice, especially when the doctor resided at a distance from his patient, yet it might succeed fairly well in hospitals, under the constant vigilance of experienced practitioners.

He approves of the immediate removal of the secundines after abortion in all cases where the cervix is somewhat dilated or dilatable, as is generally the case for an hour or so after the expulsion of the embryo, and in all cases of septicemia or danger-

ous hemorrhage, no matter when they occur. When neither of these accidents is present, and the cervix closed, he does not advocate the immediate and forcible removal of the secundines, but would wait a more favorable condition, when the finger could be easily inserted, moderate hemorrhage being controlled by ergot, the tampon, etc. No instrument in these cases was so safe, trustworthy, and generally useful as the finger. He adopts the bimanual method, depressing the uterus with one hand to within reach of the finger of the other, giving an anesthetic if necessary.

In the removal of the placenta during labor the author used the Credé method, supplemented by moderate traction on the cord. He does not believe that moderate traction on the cord, when the uterus is well contracted and properly grasped by one hand externally, is attended by the least risk of inversion or of increasing the hemorrhage by a suction-like process of the placenta on the cavity of the womb. He thinks that traction upon the umbilical cord as an aid to delivery of the placenta ought not to be abandoned.

DR. GRAILY HEWITT accorded perfectly with Dr. Glisan. In cases of abortion there was often great difficulty in passing the internal os. We must not expect the os to be open until the abortion had continued for some time. Instruments other than the finger were dangerous. He was much impressed with the importance of not allowing the secundines to remain long in the uterus.

Others present expressed the same views.

Afternoon Session.

DR. EDWARD HENRY TRENHOLME, of Montreal, Canada, presented a consideration of

INTERNAL UTERINE HEMORRHAGE THE RESULT OF OVER-DISTENTION OF
THE UTERUS FROM HYDRAMNIOS.

The author pointed out some of the causes of hydramnios and the serious results of such distention. The distention caused a deficient nutrition of the decidua, which allowed it to rupture, causing hemorrhage from the site of the tear. The blood might clot *in situ* or pass between the layers of the deciduæ. The hemorrhage began with severe pain and sense of fulness, with signs of internal hemorrhage. Cited case. We should forestall the danger by causing premature labor before the hemorrhage occurred, that is, as soon as the distention becomes excessive. Should bleeding have occurred, it is necessary to wait until the vessels have closed before we attempt treatment.

A posthumous paper by Dr. W. T. Taylor, of Philadelphia, on "Maternal Impressions Affecting the Fetus," was read by title.

DR. WILLIAM T. STEWART, of Philadelphia, read a paper on
THE IMPORTANCE OF ACCURATE DIAGNOSIS IN PREGNANCY, WITH THE
HISTORY OF A UNIQUE CASE OF RETROFLEXION OF THE GRAVID
UTERUS, LABOR AT TERM.

After some remarks on the causes and necessity of the numerous cases of abdominal surgery, in which he hoped for some better means of prevention of female diseases, he spoke of the evil effects of the modern steel-clad corset, which injured the muscles of the back, forced down the contents of the abdomen, and impeded the venous return. He reported a case showing many blunders in the way of mistaken diagnosis.

The patient, aged twenty-nine, one year after the birth of her third and last child consulted a female doctor, who told her that a tumor was growing in the posterior vaginal cul-de-sac. She consulted with several other physicians, some of them famous gynecologists, who agreed as to the nature of the "fibroid" and decided upon operation. Two days before the proposed removal of the tumor, Dr. Stewart chanced to see her and found a retroverted pregnant uterus. He advised her not to undergo the operation, and as she was not his patient did nothing more. At full term he was called upon to deliver her, and found the uterus still retroverted. The vertex presented above the brim, the body lying posteriorly. The os was dilated, but nearly out of reach above the pubes. An attempt at reposition, made with the patient in the knee-chest position, was successful. At the first pain after the reposition the membranes were ruptured, and at the second the child was born, living; weight, six and a half pounds.

Only two similar cases were recorded, in both of which the child was dead.

DR. ALEXANDER SIMPSON, of Edinburgh, Scotland, thought the case interesting, as it was extremely rare for a retroversion to persist to term.

DR. RODNEY GLISAN, of Portland, Ore., related the history of a case of retroversion of the gravid uterus reduced in the knee-chest position, at the fourth month, and followed by abortion. We should always insist upon a rectification even to the fifth month.

DR. WILLIAMS, of Baltimore, Md., related a case where a retroverted gravid uterus, with bilateral laceration of the cervix to the vaginal junction, simulated cancer with fibroid.

DR. JOHN BARTLETT, of Chicago, Ill., presented

A STUDY OF DEVENTER'S METHOD OF DELIVERY OF THE AFTER-COMING HEAD,

supplementing the paper with a demonstration upon the phantom.

Deventer spoke in the most confident manner of the success and safety of podalic version, and of the ease with which the head could be delivered, but did not describe his method, which, however, Dr. Bartlett had found mentioned in Smellie's work. Deventer's method was shown to consist of a reversal of the so-called Prague method, in that the body of the child was carried far backward toward the perineum, with the view of turning the occiput out from under the pubes, the anterior surface of the neck resting on the perineum. At the beginning the occiput of the

child was turned forward, so as to come under the pubis as the child was drawn down. The arms were *not* to be drawn down, but left up alongside the head, being placed so as to come anterior to either parietal boss. The delivery by traction backward upon the body was to be aided by pressure made immediately above the pubes, the wedge formed by the head and arms being decomposed by the withdrawal of the larger transverse diameter of the head from between the arms, as descent of the head accompanied by extension occurs. The mechanism was only favorable when the occiput was anterior. Deventer never lost a child or tore a mother. The arms being left up, protected the neck of the child and allowed a passage for the cord alongside of them, so that haste was not as necessary as with ordinary methods, and occupying a broad and yielding part of the pelvis, they did not obstruct delivery. The method was a plausible one, and certainly worthy of trial in suitable cases.

PROFESSOR SIMPSON spoke of Deventer as one of the most reliable of obstetric writers; yet, as the method would seem to endanger the perineum, he would like to see a practical demonstration of its value.

DR. A. F. A. KING, of Washington, D. C., considered Dr. Bartlett's paper the best that had been presented to the Section. In regard to the safety of the method, we must remember that the puerperal canal was elongated by the perineum, which he thought liable to be torn. However, he should describe the method in the next edition of his book.

DR. PARKES, of Chicago, Ill., described two cases where he had had difficulty in getting down the arms, and where a decided pull backward had easily and unexpectedly delivered the head. He had not understood the matter until Dr. Bartlett's paper had made it clear.

DR. JONES, of Danville, Ill., cited three similar cases where he had, without knowing it, used this method, with the patient on the side; the delivery being unexpectedly easy and the perineum intact in each case.

DR. J. E. KELLY, of New York, read an elaborate paper, entitled

LITHIASIS IN PREGNANCY.

Being impressed by the frequency, during gestation, of many of the arthritic, gastric, and other phenomena which ordinarily are present in lithiasis, the author reviews in detail the relations existing between the two conditions, and concludes that the association is due to the correspondence of the condition of the blood in lithiasis and pregnancy. First considering the general pathology of lithiasis, and subsequently that of the various systems, he then investigates the phenomena of pregnancy, and indicates the influences which produce, in the maternal blood, a condition almost identical with that which is present in lithiasis, and draws a parallel between the diseased conditions most frequently observed in pregnancy and the symptoms of lithiasis. These in-

vestigations would suggest the careful supervision of the condition of the pregnant female, especially with regard to the digestive, circulatory, and urinary symptoms, and, in suitable cases, the intelligent application of prophylaxis.

DR. E. P. CHRISTIAN, of Wyandotte, Mich., read a statistical paper on

THE PROPORTION AND CAUSES OF STILL-BIRTHS.

The average for States and countries was about four per cent; for large cities seven per cent. His personal statistics, in a small manufacturing town, were a little less than four and a half per cent in 1,675 labors, including 17 cases of twins.

Prominent among the causes of mortality were syphilis, intemperance, and ergot.

PROFESSOR ALEXANDER SIMPSON spoke of the value of such statistical researches and of the labor they required. He strongly condemned ergot, given before the birth of the child, as being a most fruitful cause of still-births.

DRS. DUNMIRE, of Philadelphia; PIERCE, of Ohio; LESTER, of New York; STEWART, of Philadelphia; ROBINSON, of Danville, Va.; and SALE, of Mississippi, united in condemning this use of ergot.

Friday, September 9th—Fifth Day—Morning Session.

The Committee appointed to formulate resolutions in regard to

UNIFORMITY IN OBSTETRICAL NOMENCLATURE,

submitted its report, which, after an animated discussion, was unanimously accepted, the only dissentient being Dr. Martin, of Berlin, who was not present, but had left a message stating that he thought the matter should not be settled by an American Congress, but should wait three years, and should be accepted or not by a congress meeting in the Old World.

Report as Accepted.

A. It is desirable to try to attain to uniformity in obstetrical nomenclature.

B. It is possible to arrive at uniformity of expression in regard to: 1. The Pelvic Diameters; 2, The Diameters of the Fetal Head; 3, The Presentations of the Fetus; 4. The Positions of the Fetus; 5, The Stages of Labor; 6, The Factors of Labor.

C. The following definitions and designations are worthy of general adoption by obstetric teachers and authors:

I. PELVIC BRIM DIAMETERS.—1. Antero-posterior; (1) Between the middle of the sacral promontory and the point in the upper border of the symphysis pubis crossed by the *linea terminalis* = *Diameter Conjugata vera*, Cv. (2) Between the middle of the promontory of the sacrum and the lower border of the symphysis pubis = *Diameter Conjugata diagonalis*, Cd.

2. Transverse: Between the most distant points in the right and left ileo-pectineal lines = *Diameter Transversa*, T.

3. First Oblique: Between right sacro-iliac synchondrosis and left pectineal eminence = *Diameter Diagonalis Dextra*, D. D.

4. Second Oblique: Between left sacro-iliac synchondrosis and right pectineal eminence = *Diameter Diagonalis Laeva*, D. L.

II. FETAL HEAD DIAMETERS.—1. From the tip of the occipital bone to the centre of the lower margin of the chin = *Diameter Occipito-Mentalis*, O. M.

2. From the occipital protuberance to the root of the nose = *Diameter Occipito-Frontalis*, O. F.

3. From the point of union of the neck and occiput to the centre of the anterior fontanelle = *Diameter sub-Occipito-Bregmatica*, s. O. B.

4. Between the two parietal protuberances = *Diameter Bi-Parietalis*, Bi-P.

5. Between the two lower extremities of the coronal suture = *Diameter Bi-Temporalis*, Bi-T.

III. PRESENTATION OF THE FETUS.—The *presenting part* is the part which is touched by the finger through the vaginal canal, or which, during labor, is bounded by the girdle of resistance.

The *occiput* is the portion of the head lying behind the posterior fontanelle.

The *sinciput* is the portion of the head lying in front of the *bregma* (or anterior fontanelle).

The *vertex* is the portion of the head lying between the fontanelles and extending laterally to the parietal protuberances.

Three groups of presentations are to be recognized, two of which have the long axis of the fetus in correspondence with the long axis of the uterus, while in the third the long axis of the fetus is oblique or transverse to the uterine axis.

1. Longitudinal: (1) Cephalic, including vertex and its modifications; face and its modifications; (2) pelvic, including breech; feet.

2. Transverse or trunk, including shoulder, or arm and other rarer presentations.

IV. POSITIONS OF THE FETUS.—The positions of the fetus are best named topographically, according as the denominator looks—first, to the left or the right side, and second, anteriorly or posteriorly. When initial letters are employed, it is desirable to use the initials of the Latin words.

In the case of Vertex positions, we have:

Left Occipito-Anterior = *Occipito-Laeva-Anterior*, O. L. A.

Left Occipito-Posterior = *Occipito-Laeva-Posterior*, O. L. P.

Right Occipito-Posterior = *Occipito-Dextra-Posterior*, O. D. P.

Right Occipito-Anterior = *Occipito-Dextra-Anterior*, O. D. A.

The Face positions are:

Right Mento-Posterior = *Mento-Dextra-Posterior*, M. D. P.

Right Mento-Anterior = *Mento-Dextra-Anterior*, M. D. A.

Left Mento-Anterior = *Mento-Læva-Anterior*, M. L. A.

Left Mento-Posterior = *Mento-Læva-Posterior*, M. L. P.

The Pelvic Positions are:

Left Sacro-Anterior = *Sacro-Læva-Anterior*, S. L. A.

Left Sacro-Posterior = *Sacro-Læva-Posterior*, S. L. P.

Right Sacro-Posterior = *Sacro-Dextra-Posterior*, S. D. P.

Right Sacro-Anterior = *Sacro-Dextra-Anterior*, S. D. A.

The Shoulder presentations are (left and right side of the mother):

Left Scapula-Anterior = *Scapula-Læva-Anterior*, Sc. L. A.

Left Scapula-Posterior = *Scapula-Læva-Posterior*, Sc. L. P.

Right Scapula-Posterior = *Scapula-Dextra-Posterior*, Sc. D. P.

Right Scapula-Anterior = *Scapula-Dextra-Anterior*, Sc. D. A.

V. THE STAGES OF LABOR.—Labor is divisible into three stages: (1) First stage—from the commencement of regular pains till complete dilatation of the os externum = *Stage of Effacement and Dilatation*. (2) Second stage—from dilatation of os externum till complete extrusion of child = *Stage of Expulsion*. (3) Third stage—from expulsion of child to complete extrusion of placenta and membranes = *Stage of the After-birth*.

VI. THE FACTORS OF LABOR ARE—(1) The Powers. (2) The Passages. (3) The Passengers.

(Signed)

DE LASKIE MILLER, M.D.,

President of the Section.

A. F. A. KING, M.D.

WILLIAM T. LUSK, M.D.

A. R. SIMPSON, M.D.

DR. R. S. STRINGER, of Florida, presented a paper on

A RATIONAL METHOD OF RELIEVING ASPHYXIA NEONATORUM,
which, in the absence of the author, was read by title.

DR. IRA E. OATMAN, of San Francisco, Cal., read a paper on the

TREATMENT OF PUERPERAL ECLAMPSIA.

After giving a sketch of the disease and the usual methods of treatment, he recommended, when the convulsions occurred before labor, anesthesia and clearance of bowels and rectum, together with as rapid delivery as was compatible with the safety of the patient. When the convulsions occurred after delivery, and were accompanied by high, nervous, and vascular tension, nothing was so safe, speedy, and reliable as *veratrum viride*. This he gave in the dose of \mathfrak{vi} . by mouth, or \mathfrak{ix} . by rectum, repeated every fifteen minutes until the convulsions ceased.

Should the *veratrum* cause excessive depression, an immediate and certain antidote was found in alcohol. It was better to give the *veratrum* in excessive doses than to risk the continuance of the convulsions, for the brandy or whiskey to counteract its effect

were always present, and the veratrum certainly exhibited a remedial action not otherwise attainable. The puerperal period was to be treated as usual, together with treatment of any pathological condition present. He found the veratrum equally efficient in the convulsions of children and in hystero-epilepsy.

DR. ALEXANDER SIMPSON, of Edinburgh, Scotland, thought any suggestion that would enable us to control eclampsia of extreme value. He would like to hear opinions regarding veratrum; he had used it once twenty years ago, and had not felt inclined to try it again.

DR. G. LANE TANEYHILL, of Baltimore, Md., advocated strongly the use of veratria in eclampsia, and said that fifty per cent of his cases had, in the last twenty years, been treated by it, he giving ten drops of the tincture hypodermatically every hour of convulsive action, and always keeping another hypodermic syringe with brandy to sustain the heart should the pulse go below forty-two. He was led to this practice by observing its use by Latimer in a case which he could control but temporarily by chloroform. He had not lost one case of eclampsia since using veratria; it enabled him to hold the engine (the heart) in check as an engineer with the air-brake, and was not as dangerous a medicine as was generally supposed. It produced the same effect as bleeding, save that no blood was lost to weaken the patient afterward.

DR. DUNCAN C. MACCALLUM, of Montreal, Canada, had fourteen cases; all recovered. He used chloral, chloroform, potassium bromide, bleeding, morphia hypodermatically, and cleaned out the bowels by stimulating enemata. There was no routine treatment; each case was to be treated on its own merits.

DR. PIERCE, of Ohio, thought it foolish to try to map out any one line of treatment for eclampsia; each case must be rationally treated.

DR. AUST-LAWRENCE, of Bristol, England, believed in as early delivery as possible, and the use of chloral. In plethora, bleeding was sometimes useful. It was difficult to lay down definite treatment.

DR. JONES, of Danville, Ill., said that veratrum was an active purgative, and a loaded colon was an active agent in causing epileptiform convulsions. He took charge of his patients beforehand, kept their bowels regular, used chloroform in labor when any nervous symptom appeared, and saw no cases of eclampsia.

DR. A. F. A. KING, of Washington, D. C., had never used veratria in eclampsia, but had suggested its use twenty years ago theoretically (*New York Medical Journal*, October, 1865), to lessen arterial hyperemia of the nerve-centres, by reducing the force of the heart. He then, and more recently (in the *AMERICAN JOURNAL OF OBSTETRICS*, March and April, 1887), considered, and still considers, eclampsia to be caused chiefly (and in addition to uremic poisoning) by abnormal pressure of the gravid womb upon the aorta and its branches. He believes this abnormal pressure to be chiefly due to premature descent of the lower uterine segment and fetal head *below the brim into the pelvic cavity*, especially in primiparae, two or three months before full term.

In transverse presentations, whether in multiparae or primiparae, eclampsia does not occur. The head of the child ought not to sink below the pelvic brim before labor—in fact, such *descent* is

the *second* stage in the mechanism of *labor*. Yet recent authorities affirm that it is usual, and therefore normal, in primiparæ. This he denies. He maintains that the normal posture of the fetus during pregnancy, before labor begins, is transverse or oblique; a head-presentation is abnormal until the sinking of the womb just before delivery, when it changes in order that labor may take place. To remove the cause of and prevent eclampsia, we should, by posture and manipulation, lift the prematurely descended head out of the pelvis, and put it above the brim in one of the iliac fossæ, where it normally belongs, and where it would have remained but for corsets, dress, coitus, and other displacing influences.

DR. W. W. JAGGARD, of Chicago, Ill., said: 1. Eclampsia is a symptom of renal insufficiency, renal inadequacy, to use a term of Sir Andrew Clarke's, the result of functional or organic disease. The arguments of Dr. A. F. A. King were entirely inconclusive. 2. The cause of the convulsions was cerebral anemia, the result of vaso-motor spasm, caused by irritation of the vaso-motor center, by excrementitious matter retained in the blood. 3. The indication for treatment was absolute continued narcosis. He used chloroform, potassium bromide, chloral, morphine. *Veratrum viride*, according to the researches of Wood and Behrens, of Philadelphia, causes vaso-motor dilatation, and the woman is literally "bled into her own veins." At the same time, when this remedy is employed, a hypodermic syringe filled with brandy must be ready. *Pilocarpine* is unreliable, causing cardiac depression, and aiding in edema pulmonum when no diaphoretic action is effected. Fordyce Barker has frequently called attention to this fact.

DR. OATMAN said that he had seen large doses of as much as a drachm of the fluid extract of *veratrum* taken by mistake and recovered from without treatment.

Afternoon Session.

DR. H. O. MARCY, of Boston, Mass., read a paper on the

HISTOLOGY AND PATHOLOGY OF REPRODUCTION.

The studies offered were based upon the conviction that the profession owes to the late Professor Ercolani, of Bologna, the establishment of new and simple truths which are fundamental and of the first importance. Comparative studies teach that there is a unity of type in placental development. The writer endeavored to show that immediately after conception a destructive process affects the inner surface of the uterus; in some animals and in women this process is limited to the epithelium, while in other animals, as in the rodents, the destruction extends to the entire submucous connective-tissue layer.

This destruction is essential, since it facilitates the setting up of neo-formative changes, from which will result the maternal portion of the placenta. This process consists in the formation of new vessels, which are distinguished from the vessels of the unimpregnated uterus in that both the artery and vein consist of only a simple endothelial wall, and that from the external surface

of this is elaborated a layer of special cells not separable from the wall of the vessel. These are the so-called decidual or placental cells.

The relation established between those two factors of new formation is what is known as placental development. The manner in which this relation is established gives rise to the different forms of the mammalian placenta.

DR. ALEXANDER SIMPSON, of Edinburgh, spoke of the value of the paper and sketched the development of the placenta from the lowest type, where the fetal and maternal surfaces were simply laid together, and were separated at parturition, to the complicated interdigitation in the higher animals, and the highest type as found in the human female, where, at the time of delivery, the maternal as well as the fetal portions came away together, leaving beneath it only the basal portion of the uterine mucous membrane.

DR. E. PAUL SALE, of Aberdeen, Miss., read a paper on the

MANAGEMENT OF PREGNANCY, WITH REFERENCE TO THE PREVENTION OF POST-PARTUM HEMORRHAGE,

in which he strongly insisted upon the value of prophylaxis, undertaken months before delivery, during which time the patient should be under the supervision of the accoucheur. Some of the predisposing causes and their treatment are as follows:

1. Hemophilia, abnormal tenuity of the walls of the capillaries—Use stimulating oils, as turpentine or oleum origanum. Matico, liquid extract, also good. Ergot and allied drugs no value.
2. Anemia, from various causes—Fluid extract stylothansia, cimicifuga racemosa, salix nigra, etc. Faradization of the abdominal muscles for ten minutes daily.
3. Atonic debility, from rapid childbearing—Exercise, tonics, quinine, strychnia, iron, fresh air.
4. Laceration of cervix, cancer, fibroma—Let alone, except before third month.
5. Intemperance—Moral measures (what success?).
6. Heart disease—Gelseminum.
7. Plethora—Dietetics, salines.

DR. H. B. HEMENWAY, of Kalamazoo, Mich., had not been able to diagnose post-partum hemorrhage many months before labor. He asked what was the relation of late ligation of the cord to post-partum hemorrhage.

He strongly suspected that it tended to prevent such an occurrence, and his explanation was as follows: There is no direct connection between the maternal blood-vessels and the placenta; if the cord is ligated late, or if only the fetal portion was ligated, blood flows from the placenta. The cord is normally attached near the centre of the placenta; if, then, blood is extracted, the placenta must shrink and the edge will first become detached. If blood is not extracted from the placenta, it is more rigid, and as the uterus contracts the centre is likely to be first detached. A sac is thus formed which fills with the maternal blood, and the

mouths of the uterine vessels do not firmly close. When the placenta is delivered, this accumulated blood rushes out and the maternal vessels again bleed.

DR. W. W. JAGGARD, of Chicago, called attention to the following propositions:

1. Late ligation of the cord is always indicated in the interest of the child, when not contraindicated in the concrete case. The researches of Budin have demonstrated that when the cord is ligatured when it ceases to pulsate the child receives seventy-five grammes of blood, lost when the pulsating cord is tied. The relation of late ligation of the cord to the prevention of post-partum hemorrhage, to which the gentleman from Michigan has called attention, is of great interest, if it be a fact.

2. The best preventive of post-partum hemorrhage is to secure retraction of the uterus, by keeping the hand on the fundus uteri from the moment the child begins to pass through the vulvar outlet until the muscular fibres have rearranged themselves—about one hour after expulsion of the placenta.

Kucher has called attention to friction over the fundus twice daily during the first two days of the puerperium. This is the practice in Vienna. There is little danger of dislodgment of a clot in the uterine sinuses, or interruption of the process of puerperal thrombosis, by this procedure. It is also an excellent prophylactic against resorption of septic matter.

DR. GEORGE WHEELER JONES, of Danville, Ill., read a paper on

DYSTOCIA FROM RIGIDITY OF THE CERVIX AND ITS MANAGEMENT.

After a consideration of the various conditions which might cause rigidity of the cervix, he spoke of the most important—spasmodic contraction. Here opium was most valuable, together with chloroform and Barnes' dilators, if quick dilatation was necessary. Sitz-baths, warm vaginal douches, delivery in a warm room, morphia hypodermatically, quinine where there was malaria, salicin in rheumatic cases, and electricity were all useful. He would never use chloral, as it was dangerous to mother and child. He then detailed some original investigations into the medicinal action of *Gossypii radix*, *delphinium*, and *ipeacacuanha*.

DR. A. F. A. KING, of Washington, D. C., called attention to the fact that the thinning of the uterine segment and the obliteration of the cervical canal, conditions which led to the rigidity of the cervix, were abnormalities. When the uterus and child maintained during pregnancy their normal lateral obliquity, the canal of the cervix from the external to the internal os will remain unobliterated until full term, which is the normal condition both for primiparæ and multiparæ. Under the same normal circumstances, the great thinning of the lower uterine segment, the tearing of the decidual mucous membrane, the "formation of a new cervical canal," and the other tissue-changes observed by Bandl, will be absent *during pregnancy*. They are abnormal. They may nevertheless occur *during labor* from *abnormal mechanical obstruction* to delivery. Dr. King also objected to the use of chloral.

DR. BROOKS H. WELLS, of New York, did not agree with Dr.

Jones concerning the great danger to the unborn child from the use of chloral. In about one hundred cases out of between six and seven hundred which he had had under his charge, or had witnessed, it had been used both as an anesthetic, when the first stage had been unusually painful, and in spasmodic rigidity of the cervix, and in no case had he seen any harm accrue to mother or child, but only the most gratifying results. He always used the precautionary measure mentioned by Dr. Jaggard, viz., to keep himself informed of the condition of the uterus by a hand placed over the fundus, slight rotary friction overcoming any possible tendency to relaxation, and had never had any serious post-partum bleeding, either with or without the use of chloral. Its administration might, in full doses, blunt the pains somewhat. He was accustomed to administer the drug in ten to fifteen grain doses, by mouth or rectum, until this result was attained—usually from two to four doses. He considered morphia and the hot douche important agents in treating the class of cases mentioned.

A paper by Dr. John H. Wilson, of Chicago, Ill., entitled "Puerperal Uremic Amaurosis," was read by title.

The Section then adjourned, after passing a vote of thanks to Professor Simpson for the felicitous and able manner in which he had presided.

BROOKS H. WELLS.

SECTION IN GYNECOLOGY.

HENRY O. MARCY: M.D., LL.D., *Boston, Mass., President.*

Monday, September 5th—First Day—Afternoon Session.

DR. NATHAN BOZEMAN, of New York, read a paper entitled

ARTIFICIAL AND COMBINED DRAINAGE OF THE BLADDER, KIDNEYS,
AND UTERUS, THROUGH THE VAGINA, WITH AND WITHOUT GRAD-
UATED PRESSURE.

1. The importance of completion of the operation for fistula has not been duly appreciated. This forms, in many cases, the principal difficulty in the successful performance of the operation for the closure of the fistular opening. In other cases, when the fistula is cured, but the complications left without treatment, they lead sooner or later to the death or suffering of the patient. The greatest care should therefore be taken to discover and remove them.

2. Kolpoplekisis, occlusion of the os uteri, and incision of the cervix in the bladder or rectum, are unjustifiable operations. They destroy the functions of the generative organs, lead to cystitis, then form renal and vesical calculi, pyelitis, and other diseases. Moreover, they are unnecessary. By means of the preparatory treatment of the complication by the aid of my button-suture and my dilating speculum, I have been able to overcome all the difficulties which have been described as indications for operation.

3. The association of combined drainage in the dilatation of the vagina is a great improvement. The inconvenience and evil effects of incontinence of urine are thereby lessened, and the duration of the treatment shortened by the more rapid healing of the incisions and the formation of less cicatricial material in the reparative process.

4. We now propose a means of palliating the suffering due to incontinence of urine in a small proportion of cases of fistula which are incurable by this method—even the dangerous one of kolpokleisis. I believe that some form of drainage may be instituted in every case, and the patient may be thus restored to enjoy life and the performance of its duties.

5. The possession of a system of combined drainage will widen the scope of the operation of kolpo-cystotomy, done for cystitis, by removing the evils of incontinence of urine, now the chief objection to its performance.

6. Finally, I think the operation which I call kolpo-urethro-cystotomy, followed by the exploration and treatment of the disease of the ureters and pelvis of the kidney, has a brilliant future before it. In the treatment of pyelitis, renal calculi, and obstruction of the ureters, it will restrict within narrow limits the operation of nephrotomy and nephrectomy.

DR. GRAILY HEWITT, of London, indorsed the views of the essayist thoroughly.

DR. W. W. POTTER, of Buffalo, N. Y., read a paper on

THE USE OF THE VAGINAL TAMPON IN PELVIC INFLAMMATION,

from which the following deductions might fairly be drawn:

1. That many cases of disease of the uterine appendages might be arrested in their progress and diverted to successful issue without operation by appropriate treatment resorted to in their earliest stages.

2. That the early employment of regular, prolonged, and systematic vaginal tamponnement afforded one of the safest, surest, and simplest ways of preventing the ravages, in whole or in part, of the maladies in question, and of averting that mutilating of the sexuality of women consequent upon excision.

As a result of his experience he had reached the following conclusions:

1. In retro-deviations of the uterus, the reposition of the organ should be made in the genu-pectoral posture without the aid of any other reposer than the finger; it should then be shoved up and held in place by the multiple tampon. This treatment should always precede the employment of a pessary for a longer or shorter period, according to the peculiarities of the case.

2. The foregoing applies with equally cogent force to prolapses and inflammations of the ovaries whenever these principles can be suitably adjusted to such cases.

3. In abrasions, erosions, and ulcerations of the os, in the hyperplastic womb, in subinvolution, in cystocele, in rectocele, and in all conditions of disturbed or impaired nutrition of the pelvic organs, it affords a most efficient form of preparatory or curative treatment, tending to give the organs rest, restore their tone, deplete engorgement, remove blood-stasis, improve locomotive power, and arrest retrograde tendencies in general.

4. In pelvic inflammations, whether of cellular, peritoneal, or other origin or involvement, it will often change their current or arrest progress, prevent suppuration or abridge its ravages, and thus often guide to a successful issue without a final appeal to a formidable, and perhaps dangerous, operation.

DR. J. E. BURTON, LL.D., of Liverpool, England, read a paper on the subject of

REMOVAL OF THE TUBES AND OVARIES.

The author considered these operations dangerous to life, more so, perhaps, than ovariectomies, while the diseases for which they are recommended and performed are, as a rule, not so.

The operation is by no means a striking success therapeutically; many of the cases operated on are no better for it, some are even worse, while in good cases it takes at least twelve months for the patient to completely recover from its effects. We hear of "brilliant" cases that have taken two and three years before the "brilliant" results became manifest. It may be fairly assumed most of these would have recovered in that length of time without operation.

When the results are the best possible, the woman is mutilated for life, an offense against conservative surgery as well as the first canon of medicine, *non nocere*. The mutilation entailed by the operation is particularly offensive to the sentiments of all civilized nations, and reduces a woman to the position of a female eunuch. Her loss and degradation (?) will certainly be remembered when the recollection of her sufferings has faded.

The objections to the operation being so grave, it ought to be performed only in justifiable cases—after (1) prolonged treatment by less heroic and radical measures; (2) consultation with colleagues; (3) full explanation of the nature of the operation and its results to the patient herself and her nearest friend.

As regards the operation itself, it is justifiable in:

1. Rapidly growing or bleeding myomata after other treatment, patiently carried out, has failed.

2. Pyo-salpinx, if life is threatened by repeated attacks of peritonitis.

3. Chronic ovaritis (especially inflammation of the albuginea when Graafian vesicles burst through), when the pain is fixed and constant and months have been spent in unavailing treatment.

4. Parametritis, which, though it may not be dangerous to life at the time, may render the patient a permanent invalid.

5. Cystic degeneration of the ovaries, under the same condition as to pain as No. 4.

6. Neuroses distinctly of ovarian origin that have withstood years of treatment.

The operation is not justifiable in:

1. Myomata, except as noted.

2. Pyo-salpinx, if the disease has become quiescent, if pain and fever have subsided, and the pus has become inspissated.

3. Hydro-salpinx at any time, unless an associated perimetritis demand removal of the parts. A less radical operation will usually suffice.

4. Perimetritis, unless the disease promises to render the patient a permanent invalid.

5. Ovaritis, except under conditions noted.

6. Cystic degeneration of ovaries, except under conditions noted.

7. Hematocele and hemato-salpinx under any conditions. Laparotomy and drainage may be called for, but removal of the organs, never. The same applies to ectopic gestation.

Tuesday, September 6th—Second Day—Morning Session.

THOMAS MOORE MADDEN, M.D., F.R.C.S. Ed., Dublin, Ireland, sent a paper on

THE CAUSES AND TREATMENT OF BARRENNESS.

In this paper will be found, in tabular form, a statement of the causes of sterility in five hundred and twenty-eight of the cases of infecundity which, occurring in married women within the child-bearing period, have come under observation in the gynecological department of his hospital. The cases may be roughly divided into two classes:

(1) Those in which barrenness was occasioned by sexual impotency or some physical impediment from the vulvar orifice to the ovaria. (2) Cases of true sterility, or conceptive incapacity from deficiency congenital or acquired, structural disease, arrested developments, supra-involution, etc., of the uterus, or from analogous morbid conditions of its appendages. (3) Cases of barrenness from constitutional causes. (4) Cases in which the causes of infecundity were apparently moral rather than physical, such as sexual incongruity, etc.

According to this table, the most frequent cause of sterility is stenosis of the cervical canal. And as he believed the operative treatment of such cases, simple as it is deemed by some, requires more consideration than it generally receives, and frequently proves worse than useless from the disregard of certain details

and precautions which he considered essential, he ventured to recommend the use of a method of procedure and the adoption of instruments which he had found advantageous in the curative treatment of stenosis in 380 cases of obstructive dysmenorrhea and sterility traceable to this cause. During the present session 70 cases have been treated in this hospital.

The essential features of the method of treatment are the separation by cutting and simultaneous forcible expansion of the affected parts, followed by dilatation during the period of cicatrization, so as to prevent their subsequent contraction, and thus to secure the permanent patency of the occluded passage. To obtain this result he used three instruments, viz., a special form of uterine director which can be introduced into any cervical canal, however narrow, and along which a serrated, triangular-guarded knife is made to travel up through the os internum; and, thirdly a uterine dilator of great power, by which any required degree of cervical expansion may be effectually secured and accurately gauged.

DR. S. C. GORDON, of Portland, Me., said he did not believe that cases existed where there was not enough canal for the semen to pass up. He believed with Dr. Madden that vaginismus had very much to do therewith. We must remember that we cannot raise large crops on barren soil. No one has done more for the relief of these conditions than Graily Hewitt, who is now with us. The uterus is in an abnormal position, and you must return it to its normal position, as is his custom to do so effectually with his pessary. Above and beyond this come the Fallopian tubes and ovaries. The points concerned are, first, vaginismus; second, uterine or pelvic congestion. He was convinced that the Fallopian tubes and ovaries had more to do with sterility than the stenosis of the cervical canal.

DR. GRAILY HEWITT, of London, expressed his conviction that the good was done through the straightening of the uterus, not the dilatation. He believed it acted by straightening.

DR. LAPHORN SMITH, of Montreal, thought that in many cases the difficulty did not lie in the vagina, cervix, uterus, Fallopian tubes, or ovaries, but in the testicle.

DR. DANIEL T. NELSON, of Chicago, thought with Dr. Smith that in many cases the male was at fault. If the mucous membrane of the female is pale, anemic, contracted, cicatricial, containing little blood, the sperm is not nourished, or if so, only for a few days. Sea-bathing often does good, but only when the husband remains at home.

A. REEVES JACKSON, A.M., M.D., of Chicago, Ill., read a paper on

THE MODERN TREATMENT OF UTERINE CANCER.

Correct views of pathology and accurate diagnosis form the only rational grounds for proper treatment of disease. The modern treatment of cancer is based on the theory of its local origin, and implies the possibility of its complete removal. If this theory be true, failure to cure depends upon the essential inadequacy of the

means used, or their untimely or inefficient employment. All remedial means are inadequate which have not the power to remove the diseased structures. The object of the treatment may be palliative or radical, the determination depending upon the location and extent of the disease and the general condition of the patient. Palliative measures are always available, while radical measures are not always safely applicable. Medical agents taken internally may be beneficial as palliatives, but are useless, so far as we know, in removing or modifying the progress of the disease.

Conclusions : 1. Any operation for cancer which does not completely remove the disease will be followed by recurrence.

2. During life the limit of cancerous disease originating in any part of the uterus cannot be known; hence no operative procedure can guarantee complete removal.

3. In view of this fact no operation is justifiable which greatly endangers life, provided other and safer methods are available.

4. Vaginal hysterectomy is more dangerous, in a certain sense, than the disease against which it is used; that is, a given number of patients afflicted with uterine cancer will live longer without than with the operation.

5. Other methods of treatment, attended by not more than one-sixth to one-fourth the mortality of vaginal hysterectomy, are equally efficient in ameliorating the symptoms and retarding the progress of the trouble, and they have been followed by as seemingly good results as regards recurrence. Hence they should be preferred.

6. Vaginal hysterectomy does not avert or lessen suffering; it destroys and does not save life. It is, therefore, not a useful but an injurious operation, and as such is unjustifiable.

DR. GRAILY HEWITT, of London, England, read a paper on

THE RELATIONS BETWEEN CHANGES IN THE TISSUES AND CHANGES IN
THE SHAPE OF THE UTERUS.

In order to determine more precisely the true relation existing between changes in the tissues of the uterus and changes in its form and shape, concerning which wide differences of opinion prevail, it is evident that the initial stage of these changes offers the widest field for inquiry.

In describing uterine tissue-changes, the term "chronic metritis" is generally employed. It is desired to call attention to a tissue-change sometimes observed on or soon after the arrival of puberty, especially in young women who have been inadequately nourished, consisting in undue softness in the uterine tissues, and associated with them in the beginning of uterine suffering. This undue softness is not "inflammatory" in its nature. It is associated with great flexibility of the uterus, and generally with marked flexion. The author first described it ten years ago, and

has repeatedly remarked it since. It has recently been noticed by Dr. Charles D. Scudder, under the term of "mollities uteri."

The recognition of the liability to occurrences of this initial change in the uterine tissues is to be regarded as very important in the explanation of the origin and increase in degree of flexions of the uterus. In such cases the uterus being abnormally flexible, the flexion may be easily and gradually intensified by any ordinary exertion, but will be more likely to be much exaggerated and perpetuated by any severe and suddenly acting mechanical disturbance. The process by which the uterus becomes permanently flexed may thus be slow or rapid.

Hardening of the uterus occurs sooner or later. After hardening, the flexion is persistent.

In some few cases the flexion may be persistence of a congenital condition, or due to absence of developmental growth at the time of puberty, without undue softness being present.

In multiparæ a somewhat analogous condition is present, in what is known as "defective uterine involution," the uterine tissues being soft and wanting in resistance. As is generally admitted, low flexions frequently originate at such times and under such circumstances.

The author contends that the interference with circulation present with uterine congestion is, in most cases, due to association of a weak blood-current and mechanical compression of uterine tissue, due to flexions present in such cases. The uterus being unduly soft and plastic, it takes a flexed shape, which often becomes perpetuated by the hardening process described by Jacobi as the result of chronic metritis. One consequence of the latter is the presence of sclerosis of the uterine parenchyma. It is to be remarked that the incidents of some of the cases related by Putnam Jacobi favor the view that the flexion and displacement were operative in producing the menstrual subinvolution, rather than the cervical catarrh, which Jacobi assigns as the principal cause.

As regards endometritis, he considers the condition so described as more generally due to congestive hypertrophy of the uterine lining, and to retained irritating secretion, and that, excluding gonorrheal and syphilitic cases, the endometritis is secondary rather than primary.

Afternoon Session.

DR. W. H. WATHEN, of Louisville, Ky., read a paper on the subject

RAPID DILATATION OF THE CERVIX UTERI.

The author had learned in the field of experience and observation of the bad results obtained in efforts to dilate the cervical canal by

tents, or to enlarge or straighten it by incisions to cure dysmenorrhea and sterility. He begged to call attention to the more satisfactory means of rapid dilatation with the bivalve or double-bladed dilators now in use, and especially to the substitution of an instrument of his device for Goodell's modification of Ellinger's dilator. If tents were used, he preferred the tupelo to any other variety, it being less apt to cause septic inflammation than the sponge, and dilated more rapidly, regularly, and better than the tangle. He referred to endometritis, pelvic hematocele, pelvic cellular or peritoneal inflammation, septicemia, pyemia, and tetanus, as complications accompanying or following the use of tents, and did not believe that any good results, apparently, were permanently obtained. He claimed the two-bladed dilators are relatively aseptic and are easily used, complete the operation at one sitting, and that the dilatation is comparatively free of immediate or subsequent dangers. It nearly always cures the dysmenorrhea, and oftens removes the causes of sterility.

He thought the results of the incision of the cervix up to the vaginal junction, or through the internal os, anteriorly, posteriorly, or bilaterally, even more unsatisfactory than those following the use of tents. He dilates the cervix in his office, without a local or general anesthetic, to the extent of half an inch, and allows the woman to walk or ride home a few minutes after. In dilatation of from three-fourths to one inch, he gives a hypodermic of morphia and atropia, then brings the patient under the influence of chloroform before operating. He urges great cleanliness, and all means to prevent septic infection. He uses three sizes of dilators, the largest the one he devised. He explained the points of superiority over Goodell's.

In conclusion, he urged that the operation should not be performed if there is any pelvic inflammation or trouble in the tubes or ovaries; and never, in any case, until we are reasonably positive that the cause of the trouble is in the cervical canal.

DR. A. MARTIN, of Berlin, said that the dilatation of the uterus as an operation had undergone remarkable changes since its origination. The instruments shown by Dr. Wathen are an improvement. The great object is to open up the internal os. The degree of dilatation may be required to be less in some cases of small cervix. It is a question whether we have not been dilating in too many cases. He would not recommend that we go back to lamina- and sponge-tents.

DR. S. H. WEEKS, of Portland, Me., claimed that every case of dysmenorrhea was not due to mechanical obstruction of the cervix. The ovaries and tubes have much to do with it, and in his experience have been oftener at fault than the cervical canal. He was surprised at the freedom from danger reported in this operation. Professor Goodell has reported one hundred cases with no bad result. These instruments are not devoid of danger, and bad results may come.

DR. C. R. REED, of Middleport, O., thought it quite puzzling to

the young gynecologist to tell what to do, the testimony being so conflicting. Some authors reported that there never had been any bad results in the few hundred cases that they had operated on; others had frequent fatalities. He had more hesitancy in operating now than formerly. We cannot predict what the result will be in a given case.

DR. GOELET, of New York, thought that the term rapid dilatation given to the operation was a misnomer. It had come into use to distinguish it from the dilatation by sponge or laminaria tents.

DR. STEASON, of North Carolina, had performed dilatation fifty or seventy-five times a year for the past ten years, and keeps his patients in bed but two days. He has never had any fever, and has not used any antiseptic except soap and water. He uses a glass rod to keep the canal open, much the same as does Dr. Goelet, leaving it there sometimes as long as a week. He did not believe in the superfluous use of so much antiseptic.

DR. A. REEVES JACKSON, of Chicago, objected to the operation because it did not do any good, at least permanent good.

DR. BALLS-HEADLEY, of Australia, never uses any sponges and laminaria in dilatation, which he reviewed *in extenso*. He was in favor of the old treatment.

DR. HARRF, of Ohio, recommended an original plan of his own, viz., the use of corn-stalk pith. He entered his protest against rapid and extensive dilatation.

DR. AUST-LAWRENCE, of Bristol, England, had used sounds constantly for years. His patients are constantly coming back. In the unimpregnated uterus, with proper precautions, this treatment can be used, but the sound must not be left in too long. He used gelatin-coated sponge tents, previously saturated with carbolic acid.

DR. WATHEN, in conclusion, as to the question concerning his operating at his office, said he did it without any concern, and no anesthetic. As to Emmet's opinion, we will concede a great deal to him in gynecology, but he did not see how he could be taken as an authority in this subject, seeing that he has not performed the operation, condemns it *in toto*, and will have nothing to do with it. The happy medium in this, as in other cases, is the thing to follow. No one would dilate for dysmenorrhea caused by cellulitis or inflammation. The operation can be performed to straighten the neck of the uterus, and we can shorten the neck of the uterus by dilating the cervix and without amputation.

Wednesday, September 7th—Third Day—Morning Session.

DR. ERNEST W. CUSHING, of Boston, read a paper entitled,

CANCEROUS DEGENERATION OF THE HYPERPLASTIC GLANDS OF THE
CERVIX UTERI.

Ruge and Veit have described a condition of the glands which they considered to be in itself the nature of a cancer—a transition from innocent to malignant formation. This seems to me much less clearly demonstrable than the views which they maintain concerning erosion.

Briefly, they attribute the greater import to a certain filling up of the lumina of the glands with epithelial cells, either columnar or flat. The fascinating theory of Veit and Ruge agrees so thoroughly with Theirsch and Waldeyer, and their followers, that it has been very widely accepted, and a plate showing the transition is shown in A. Martin's "Gynecology." I think it possible that greater importance has been attached to this condition of glands than has been warranted.

The question is of practical importance in regard to the microscopical diagnosis of suspicious affections of the cervix, for, as it is admitted that the diagnosis cannot be made securely by the unaided eye, nor by the touch, and as vaginal hysterectomy is now advocated, and, at any rate, free amputation of the portio vaginalis is indicated in all cases of undoubted cancer, even in an incipient stage, a great responsibility is thrown on the microscopic examination.

In the first place, as Ruge and Veit expressly declare, in their majority of cases, the carcinoma did not originate in the new-formed gland, but infiltrated the cervix as a "carcino-sarcoma," an aggregation of small cells lying in masses in alveoli of connective tissue. In such cases there was no evident connection with the epithelium of the surface with the glands.

In four out of twenty-two beginning cancers of the cervix, however, they found appearances of solidification of the glands and filling up with epithelium, which they describe and figure as a transitional stage in the development of the adjacent cancer. With much diffidence I venture to suggest that my studies of the changes in question have led me to different conclusions from these observers.

The plates of Ruge and Veit are not conclusive on this point.

Even when a whole series of glands lying adjacent to each other show occluded lumina on section, I cannot feel the diagnosis of carcinoma is justified, but only that of adenoma. It may become destructive, but is not carcinomatous until changes occur in the connective tissue between the glands, when the boundaries of the glands are broken through by the growing cells.

Even when the new glands are thus involved manifestly in the carcinomatous growth, it has seemed to me they are invaded from without by the growth of cells in the surrounding tissue. . . . I have found no evidence that after filling up the lumen of a gland the proliferating columnar epithelium changes to the flat variety, and, breaking through the boundary of the gland, invades the surrounding tissue.

Moreover, in attributing so much importance to the fact that they found the lumina of some of the new glands occluded, Ruge and Veit have not noticed the explanation that precisely these solid acini or branches may be the first stage of their existence previous to the formation of the lumen.

Such a mode of growth is seen in the formation of new glands in the walls of a multilocular cystoma of the ovary. These little solid sprouts, lined with columnar epithelium, afterward become hollow and then dilate, forming cysts.

A similar mode of growth is seen in the female breast when rapidly enlarging, preparatory to the secretion of milk.

Where the microscope shows glandular degeneration, the surface bare of epithelium, the tissues heavily infiltrated with small cells, especially if the woman be fifty or over, we should not say that the microscope only shows chronic inflammation, but that while cancer is not proved, it is not excluded, and should recommend a free removal or destruction of the suspected tissue.

Shall we, then, say that a case is not cancerous which shows no distinct structure of carcinoma on microscopic section, only a glandular hypertrophy, with some of the glands filled with epithelia, and the stroma infiltrated with small cells, the surface denuded of its epithelial cells and irregular?

May we not reconcile the long contest between the two theories, which assign the origin of cancer respectively to the connective tissue and to the epithelial layer of the glands of the involved organ, by supposing that the anatomical arrangement of cells, which clinically and microscopically we call cancer, is only the visible and outward sign of a morbid agent at present hidden from us?

The practical deductions which depend upon our speculative opinions as to the nature of cancer are of the greatest importance.

In the first place, if the disease comes from within, if it is a perverted growth of a part of the tissues, dependent on some original error of development, it is necessarily absurd to try to find, empirically, any medicine which should cure it.

If, however, it is an infection of some kind from without, we are justified in trying empirically, if as yet vainly, for some remedy which may overcome it.

Of more practical importance is the question of the utility of cauterizing the stump or cavity from which a cancer has been removed. There is considerable evidence which shows that surgical interference with a cancer is sometimes followed by a recrudescence of the disease more rapid and violent than the original disorder. If we consider that the operation opens veins and lymphatics which sometimes become infected with the morbid agent, we can better understand why a thorough cautery of the tissues left bare by the removal of a cancer of the cervix should be apparently so useful in lessening the chances of a return of the disease.

DR. FRANKLIN H. MARTIN, of Chicago, Ill., read a paper with the title,

A METHOD OF TREATMENT OF FIBROID TUMORS OF THE UTERUS BY
STRONGER CURRENTS OF ELECTRICITY BASED UPON EXACT
DOSAGE.

The author recognized in the treatment adopted by Dr. Apostoli a rational, harmless, comparatively painless and eminently successful mode of treating fibroid tumors of the uterus by electricity. It is upon these well-tried principles that Dr. Martin is able, after successful practical experiments, to lay down an exact line of dosage, enabling him to obtain all the beneficial effects of electricity without overstepping the limits of tolerance in the most susceptible or sensitive subjects.

The distinctively original feature of the paper was the description by Dr. Martin of his method of exact calculation of dosage, experiments being cited which showed that a certain local effect may be expected at an active electrode of given surface from a definite strength of current passing for a certain length of time. The demonstrations proved that in order to get the characteristic local effects of electricity on the mucous membrane of the uterus, or to check hemorrhage, upon a surface of one square centimetre, a current of twenty-five milliampères passing for five minutes is necessary. One square centimetre is found to be about the surface represented in length of the uterine sound electrode. Upon this basis of calculation, the uterine canal which would require an Apostoli electrode twenty centimetres in length would require a current, if equal conduction took place from its entire surface, of five hundred milliampères. The author argued that in many cases this strength of current would not be tolerated, and if it were, there is no means of being certain that the sound conducts equally from so large a surface or that it comes in actual contact with the mucous membrane of the uterus in its entire extent.

In order to obviate this difficulty, Dr. Martin has employed electrodes, concentrating the current to smaller portions of the uterine canal, so constructed that each portion of the canal may be treated at each succeeding operation.

Dr. Martin recognizes but two varieties of operations:

1. Positive interuterine galvanism, which corresponds to Apostoli's "galvano-caustique positive."

2. Negative intrauterine galvanism, which corresponds to Apostoli's "galvano-caustique negative." These operations were fully described, from which procedures Dr. Martin believes we have a safe, painless, accurate, and rational method of treating fibroid tumors of the uterus. By this method all danger to the patient is avoided, such as may be observed in other treatments.

In conclusion, the principal advantages of this method were summarized under six headings: (1) It is entirely free from danger; (2) it is absolutely painless; (3) it invariably checks hemorrhage; (4) it rapidly reduces the size of tumors; (5) it alleviates

neuralgic pain; (6) it is a system of treatment of fibroid tumors of the uterus based upon principles which make exact dosage possible.

DR. THOMAS MORE MADDEN, F.R.C.S., of Dublin, Ireland, sent a paper entitled

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF LACERATIONS OF THE CERVIX UTERI.

The pathology and treatment of lacerations of the neck of the uterus have received an amount of attention, in America and elsewhere, which would appear exaggerated were it measured by the comparatively scanty attention as yet accorded it in Great Britain. When he read a paper on Emmet's operation at the closing meeting of the Dublin Obstetrical Society, the very name of that operation, or the circumstances calling for trachelorrhaphy had never been alluded to in the transactions of the association of British obstetricians and gynecologists.

In neither English nor American literature had he found sufficient recognition of the frequent complications, pure and immediate, arising from cervical lacerations in obstetric practice; viz., the causation of one of the most troublesome forms of post-partum hemorrhage, and secondly, the occasional occurrence of puerperal septicemia as the direct result of lacerations of the cervix uteri. So far as he was aware, the advantages of amputation of the mutilated and hypertrophied cervix, in many cases of extensive stellate and bilateral lacerations, over trachelorrhaphy were not generally recognized. He was convinced by his clinical experience, which was now tolerably large, that it was a far better and more rational practice, if any operative treatment were really required, to resort to the amputation of the entire extent of the mutilated and diseased cervix by either *écraseur* or *galvano-cautery*. He need not say he did not advise this operation indiscriminately; indeed, he thought the majority of cases of cervical laceration needed no operative treatment specially, and such an operation as the removal of the cervix was not to be undertaken without due caution and, above all, real necessity. When thus justified, however, the amputation of the cervix, despite the protestations of some eminent gynecologists, was as unquestionably legitimate as any operation in gynecological surgery. By this procedure, when successful, the surgeon may rapidly and effectually remove every trace of a morbid condition which, if uncured, would probably entail a life of continual uterine discomfort. We may also with certainty prevent the otherwise not improbable possibility of the lacerated and hypertrophied parts becoming the seat of malignant disease at a future period.

DR. LEOPOLD MEYER, of Copenhagen, Denmark, read a paper on

CONTRIBUTIONS TO THE PATHOLOGY OF CHRONIC INFLAMMATION OF
THE LINING MEMBRANE OF THE UTERUS.

1. (a) In cases of chronic endometritis, as a rule, we find two varieties of cells, or, rather, of nuclei (as the limits of each single cell are often not distinct) in the interglandular tissue. One variety has smaller nuclei; these average as large, or a little larger, than red blood-corpuscles, are stained brightly by hematoxylin, carmine, Bismarck-brown, and the substance of the nucleus rarely presents a granular condition.

The second variety has a great resemblance to the so-called decidua-cell.

(b) This second variety of cells is not only found in cases where the woman has been pregnant, but is seen in the most developed forms in women whose virginity is unquestionable.

(c) This second variety of cells seems, as the first variety, to be derived from the cells normally found in the interglandular tissue of the lining membrane of the uterus, the decidua. Cells of the second variety are found in the normal lining membrane during menstruation.

(d) Besides these two kinds of cells, we find regular connective-tissue cells and white blood-corpuscles in the interglandular tissue.

2. In cases of chronic endometritis the epithelium covering the lining membrane of the uterus can preserve its character of a low columnar epithelium, but it frequently changes character altogether.

DR. ALFRED C. GARRETT, of Boston, Mass., read a paper on

TUMORS OF THE BREAST TREATED BY ELECTROLYSIS.

Many or most of the tumors that so frequently occur in the human breast we find can be completely cured, if treated while in the first stage of existence, by certain mild applications of electricity.

In the first place, to obtain uniform success by this method, we must plan to find these tumors as soon as possible after they form in the breast, while they are in a curable stage in the majority of cases.

However, we already know we cannot assume that every morbid lump that grows or appears in the human breast begins from the first a simple or non-malignant tumor, though the most of them seem to do so, judging from the uniformly successful results of these treatments by electricity when applied to the selected, new, or recent tumor.

We are to employ simply surface applications of certain graduated, galvanic, steady currents, through peculiar, large, soft, and moist electrodes, so adjusted close to each side of the tumor as to cause this gently chemical current to completely permeate, and

wash through the whole mass from side to side in its deeper parts mainly in direction toward the axilla, for about half an hour at each *séance*. It is not enough to simply apply the two electrodes to the surface of the breast or in any manner. Moreover, we need to use a milliampère-meter to measure the current that actually passes through the tumor and gland; also a key-board that can enable the operator to pick up and increase the current, cell by cell, to the tolerant and efficient strength, which will be from ten to fifty milliamperes. The current required for each individual case cannot be stated in exact terms, as it is found in practice there is a wide difference in the resistance, tolerance, and effect in different persons; yet this point is of great importance.

The result is, that out of 186 tumors treated since 1864, a record of them having been kept and looked after, 157 disappeared and have remained well. Several others did not quite obliterate, however, but left a small nodule, the size of a chestnut, which in every case remained benign.

Afternoon Session.

DR. W. H. WEEKS, of Portland, Me., read a paper on

MYOMA IN PREGNANCY.

He considered the question of operation in these cases to be still under discussion. He introduced the paper by the relation of a case—a young lady, pregnant, having a large uterine fibroid which nearly filled the uterine cavity. He was in favor of allowing the pregnancy to go to term, and such was the opinion of a Boston gynecologist to whom he sent her for counsel. A New York gynecologist, however, advised immediate induction of premature delivery. The method by which he would do this was to inject hot water and deliver under *per vias naturales*. If allowed to go to term, laparotomy would be necessary. Two Boston gynecologists agreed with him, and the author was obliged to surrender. He carried out the instructions of his colleagues to the letter. The patient died in less than an hour after delivery. She seemed to have died of hemorrhage and shock. When, as in this case, pregnancy is complicated by a large interstitial uterine fibroid, occupying and well-nigh filling the cavity of the pelvis, is it better to induce abortion or premature labor or to allow gestation to go on to full term, and then deliver by abdominal section?

Guided by the light of abdominal surgery, I shall maintain that in the vast majority of cases, as stated in the above question, it is better to allow pregnancy to go to term and then, if it is found that delivery is impossible *per vias naturales*, to resort to abdominal section without waiting till the patient's strength is exhausted by protracted labor. The operation best suited to such a case is Cesarean section, Sänger's method, and then the removal of the ovaries, and, if possible, the Fallopian tubes. Would it not have

been better in this case to have allowed the patient to go on to natural labor, and then performed laparotomy before she was broken down.

The author had sent out letters of inquiry to prominent gynecologists of this country and abroad. Nine out of thirteen physicians were in favor of the induction of premature labor. This proportion he hoped would be reversed.

DR. GRAILLY HEWITT, of London, opened the discussion and commended the paper very highly. It is a thankless duty to bring an unfortunate case before the Congress, and Dr. Weeks should have our admiration for doing so. He thinks it is generally admitted that rapid evacuation of the uterine cavity in labor is a mistake. The operation in this case seems to have been done rather rapidly. Whether this had anything to do with the hemorrhage and shock he did not know.

DR. TRENHOLME, of Montreal, had had three cases of labor complicated with fibroids, which he related in brief. In one of these, premature labor was brought on by a sessile tumor in the base of the uterus. The temptation to remove the tumor was great, and he did it, but the patient died. In his second case he found a small fibroid, which he left alone. The patient did well for some time, but had a return of the trouble. He believed evacuation of the uterine contents should take place slowly.

DR. AUST-LAWRENCE, of Bristol, England, discussed the question,

SHOULD A WOMAN SUFFERING FROM FIBROID TUMOR BE ALLOWED
TO MARRY?

This is a question frequently presented to the physician and gynecologist. If the patient is not suffering from symptomatic troubles you may tell her that she will probably never be pregnant, but if pregnant she will probably have hemorrhage and may die of it. With this understanding, if she persists let her marry. The doctor reported eight cases in brief. In one of these, after a large number of pregnancies, the tumor disappeared entirely.

DR. S. C. GORDON, of Maine, said that the case of Dr. Weeks was originally his own, and he felt like saying something. He agreed with Dr. Weeks that no abortion should be induced in this case. The position of the uterus in this particular case forbade the operation in his mind. The position of the tumor influences very largely our procedure. He reported a case. In a second case which he cited he advised the induction of abortion, because the tumor involved the anterior wall of the uterus low down to the os.

DR. ALEXANDER DUNLAP, of Springfield, Ohio, read a paper on

THE EARLY HISTORY OF OVARIOTOMY IN AMERICA.

This was a *résumé* of the trials and opposition which the early American ovariologists met with in prosecuting their work. The author's own work, which is well known to have been of great importance, though little of it has been published, was described minutely.

Early in 1848, with a very limited knowledge of medicine and surgery, he came in contact with a very peculiar case of ovarian dropsy which he had been led to consider as incurable. This he tapped several times, with the usual results. After much delay the patient succeeded in forcing him to perform the operation, much against his will. He invited ten of his medical friends to witness the operation. They declined, saying that they could see enough people die without seeing them killed. One of them presented himself at the time. He was an old retired army surgeon who was addicted to drinking. With this assistant and four students he operated, first giving the patient a teaspoonful of laudanum, after which he went to work (applause). The operation was carefully described. The patient was placed in bed after the operation, with no especial shock, having watched every movement made with care and interest. She did well for four days, when she had a severe diarrhea which was brought under control. She progressed favorably for a time, when she was taken with an excessive excretion of urine and died on the twentieth day after the operation, evidently from excessive drainage from the kidneys. There was no septicemia. He was convinced that she did not die from the operation but from theappings, which had deranged the system and were probably the cause of the kidneys acting as they did. He had no doubt that had he operated when she wanted him, she would have been alive to-day. His reports of this case were refused publication by the Cincinnati journals.

DR. KIMBALL, of Lowell, Mass., was then called up by the President to give his experience in early ovariectomy in the East. His story was quite similar to that of Dr. Dunlap, and his opposition as great. This opposition, he must say, came mostly from the New England metropolis, Boston. Being asked for his first case, he said his first case was one in which he did not operate. He then reported the first case in which he did operate, about thirty-five or forty years ago. He invited ten physicians. During the operation, he met with considerable difficulty in the form of nine cysts; and when he looked about for his assistants, they had all left but one.

DR. BOZEMAN, of New York, reviewed the revival of the history of ovariectomy after its abandonment by McDowell, of Kentucky, and its condemnation by the profession. Dr. Miller was the first to use chloroform as an anesthetic in ovariectomy in America. It was in Terre Haute, Ind., and he, Dr. Bozeman, gave the chloroform. He credited Dr. Dunlap very much for his work, and especially for what he had done in recognition of the importance of adhesions.

PROF. A. CORDES, of Geneva, Switzerland, read a paper on the MEDICAL TOPICAL TREATMENT OF ADVANCED UTERINE CANCER, in which he strongly advocated a mixture of equal parts of terebene and some bland oil, this application lessening greatly pain, hemorrhage, and discharge, and being an efficient deodorizer.

A paper was read by DR. A. LAPHORN SMITH, F.R.C.S., of Montreal, on

A NEW THEORY AND TREATMENT OF DISPLACEMENTS OF THE UTERUS
BY ELECTRICITY,

and one by M. LE DOCTEUR APOSTOLI, of Paris, entitled

SOME NEW APPLICATIONS OF THE INDUCED OR FARADIC CURRENT TO
GYNECOLOGY.

Thursday, September 8th—Fourth Day—Morning Session.

DR. EPHRAIM CUTTER, of New York, read a paper on

GALVANISM FOR UTERINE FIBROIDS.

(For similar paper see this JOURNAL for February, March, and April, 1887.)

Afternoon Session.

DR. AUGUST MARTIN, of Berlin, Germany, read a paper on

THE VAGINAL TOTAL EXTIRPATION OF THE UTERUS FOR CANCER.

Freund inaugurated the extirpation of the cancerous uterus ten years ago. Sufficient material is now at hand to decide the two following questions, which may legitimately be asked concerning every new method of surgical treatment:

1. Is this operation practicable with such immediate success that it promises good results in the hands of others than a few specially successful operators?

2. Does the extirpation of the cancerous uterus give permanent results which force us to recognize that this method is superior to any other treatment of cancer employed up to the present time?

In seeking an answer to the first, if they examined the literature, they would be struck with the fact that only meagre and isolated reports about this operation could be found in English and German medical journals. Vaginal extirpation had obtained decided recognition in Germany. In this country, the purely vaginal operation of Czerny and Billroth and Schroeder had been adopted instead of the procedure of Freund, which was a combination of abdominal and vaginal operations. The results of the same have improved noticeably with increasing exercise and experience.

In 1881, Olshausen collected 41 cases, with twenty-nine per cent mortality. In 1883, Säger, 133 cases, twenty-eight per cent mortality. In 1884, Engstrom, 157 cases, twenty-nine per cent mortality. In 1886, Hegar, 257 cases, twenty-eight per cent mortality.

Through the courtesy of these operators, who to his knowledge commanded the greatest amount of material, and, at his request, placed at his disposal the results up to the end of the year 1886, he was able to present the following:

Up to the end of 1886 these total extirpations had been per-

formed on account of carcinoma uteri: Fritsch, 60 times, with 7 deaths; Leopold, 42 times, 4 deaths; Olshausen, 47 times, 12 deaths; Schroeder (Hofmeier), 74 times 12 deaths; Staude, 22 times, 1 death; A. Martin, 66 times, 11 deaths. Total, 311 cases, with 47 deaths, or 15.1 per cent.

Were they not justified in assuming that this rate of mortality would decrease with more experience, as shown by the published tabular results of each of these operators? Already the total extirpation of the uterus for cancer showed better results, so far as immediate mortality is concerned, than removal of the breast for cancer.

For the latter, Küster, at the Twelfth Meeting of the German Surgical Society, in 1883, published 778 cases, with a mortality of 15.6 per cent. Who would hesitate to propose to perform the amputation of the cancerous breast so soon as the diagnosis is established?

He did not hesitate to answer his first question in the affirmative, and to claim for this operation of the vaginal total extirpation of the uterus a full and equal rank among all methods for the treatment of cancer of this organ.

For an answer to the second he would make use of the relatively small, but very accurately reported cases of Schroeder, collected by Hofmeier, and those of Fritsch, Leopold, and himself.

They show that the permanent results of vaginal total extirpation in this relatively short period of observation were no doubt equal to the best results of carcinoma operations of other organs.

The author up to the end of 1885 operated on 44 cases. Of these relapsed 18, or 29.7 per cent; recovered 31, or 70.3 per cent.

Was there any other method of treating cancer which with so small mortality could show equally good results? There was no other mode of treating cancer of the fundus and those forms of diseases of the cervix in which the mucous lining of the cervical canal was the point of origin, or in which there were carcinomatous nodules in the tissues of the neck. There was no room for discussion except in epithelioma of the portio vaginalis arising from the surface of the cervix, that is, from a surface covered with flat epithelium and containing very few glands.

He agreed with Fritsch that the observation of cases of progress of the disease in isolated nodules in the mucous membrane up to the fundus, in cases of carcinoma colli, is sufficient in itself to show it was erroneous to claim that in carcinoma of the cervix we should try to save the body of the uterus. Binswanger and P. Ruge have described such well-marked cases.

The possibility of a subsequent pregnancy was not excluded in cases of high excision; but Hofmeier himself declares that pregnancy is a very serious danger in carcinoma. Therefore he was convinced that it is much better to immediately perform vaginal total extirpation in these forms of epithelioma of the cervix. The

sooner they operate the more surely they might hope to save their patients from the sad fate of death by cancer. The greater the experience with vaginal total extirpations the more has the rule been proved that we should perform the operation only when the vicinity of the uterus is entirely free from carcinomatous infiltration. All attempts to enlarge the boundaries of the operation in this direction had failed.

The technique of the operation had undergone only immaterial changes, as is shown by the results of operators using different methods. It was irrelevant whether the uterus be removed by an incision made in front or at the side of the neck, or behind it. It was of little importance whether hemorrhages be prevented by stitches introduced before the incision, or whether each separate vessel be seized and tied as it bleeds. It was immaterial whether the uterus be turned over or removed by drawing it down and freeing it; whether the opening in the floor of the pelvis remain open or be closed, or be drained either with the iodoform gauze or with a tube.

If it were easily practicable, he advised that the ovaries and tubes be also removed. It was immaterial whether the wound be sutured or not. It was wonderful what little impression the operation made on the patient. One could liken her very much to a puerperal woman.

Bleeding must be stopped, at all events during convalescence, and the parts as much as possible kept at rest. Washing out the peritoneal cavity does not work favorably.

The papers of Drs. MARTIN and JACKSON, on "Hysterectomy for Uterine Cancer," were now opened for discussion.

Dr. MARTIN, of Berlin, said he was accustomed to prepare his patients for operation with the most thorough antiseptic vaginal injection. He then described most minutely his method of operating. He frequently opened Douglas' pouch at one stroke of the knife. When the peritoneum was opened, he introduced one finger into the cavity, and, having warm water running over the surface, sutured the vaginal mucous membrane to the peritoneum. When he had freed the broad ligament, he cut it from the uterus and generally had no hemorrhage. He then proceeded in like manner on the other side, till he had the broad ligament severed there also. Up to this stage there was very immaterial hemorrhage. He then commenced on the bladder—freeing it with the forceps or the knife. After it was freed, he united the cut border of the vaginal mucous membrane to the peritoneum, just as he did before. He was accustomed to put a rubber drainage-tube into the peritoneal cavity. He thought it did good, although he confessed that he believed that a case which is not infected should be closed up. Yet he had had such good results from this that he still used it. There were various gentlemen present who had seen him operate, and who could testify that he lost a very small amount of blood. Of course there are cases where a loss of blood is necessary from the existing conditions. The operation was yet new, it had only been done for six years, and he thought we would improve on it very much.

DR. D'ARNEY, of Hungary, gave a history of his experience with twelve cases. Out of these twelve cases only two are now living, after a period of three or four years. As to the operation, he thought that the best we could do was to close the opening into the pelvis, and fill the vagina with iodoform gauze, and let the patient alone. As to Dr. Jackson, he thought he was on the wrong road with his statistics. Statistics deal only with quantity, not with quality. If there are one hundred persons on a ship, possibly he could save only one of them. Should he not save this one? Certainly. Patients suffering with cancer of the uterus are shipwrecked persons, and sure to die a most painful death. We can save a number of our patients, and those who die usually die in a short time, and comparatively comfortable deaths. Humanity demands of us that we do the operation of vaginal hysterectomy in all cases in which we can remove all of the diseased tissue.

DR. A. P. DUDLEY, of New York, wished to enter a plea for vaginal hysterectomy for uterine cancer in America, and point out why the operation had been less successful here than in Germany. Martin had sixty-six cases, with eleven deaths. In a paper read by the speaker some time since, he reported sixty-six cases with thirty-four deaths. These sixty-six cases, however, were divided between thirty-four operators, and there lay the difficulty. Experience is a good teacher, and practice makes perfect. The child must creep before it can walk, and the surgeon must have a fair trial, especially in America. As in the case of ovariectomy, which originated in America, our surgeons are almost flocking to Europe to learn how it is done. The amount of pain and suffering in the death of the patient is one of the points which should induce us to try this operation.

DR. NUNN, of Savannah, Ga., said that there was always a starting-point to cancer. It is generally due to neglect of fissures or some other irritant, arising consequent to parturition. In his own practice he has his patients report to him occasionally after delivery, and sees that they take care of themselves properly, and he has not had a case of cancer among his own patients.

DR. GRAILY HEWITT, of London, said that the whole civilized world, and the uncivilized too, were under obligations to Dr. Martin and his colleagues for their work in this line, having advanced the operation to its present state. In a discussion in the London Obstetrical Society, a few years ago, he was the only one who refrained from condemning the operation. He thought it should be done in properly selected cases, by gentlemen of experience.

DR. A. REEVES JACKSON, of Chicago, thought it wrong to attempt to reason against facts, as well as difficult. His paper was based on facts founded on the results of Gussacrow, Paget, and such men. These gentlemen had estimated the duration of life, in those women suffering from uterine cancer, to be twenty-one months as an average. If this be true, then my calculation as to the duration of life will not be denied. The average duration of life of women operated upon is fourteen months; this difference in the aggregate amounts to nearly three hundred years of grand total loss of life. Does anybody allege that it has saved life? Dr. Martin claims that the operation should be done only when the disease is limited to the uterus. How does he know the case was limited to the uterus? Because it did not return? Baker,

of this country, by his high operation, has sixty per cent of recoveries, which is far better than Martin's.

DR. MARTIN replied that he knew that a cancer was limited to an organ by its having a layer of entirely healthy tissue around it.

Friday, September 9th—Fifth Day—Morning Session.

DR. HENRY O. MARCY, of Boston, the President of the Section, read a paper on

THE HISTOLOGY AND SURGICAL TREATMENT OF UTERINE MYOMATA.

Hysterectomy is carefully considered; especially recommended is the author's method of the use of "rubber down" with constriction at the base of the tumor by the elastic ligature. This effectually shuts off the peritoneal cavity, and allows the operation to be effected under irrigation. The stump is sewed through with tendon suture by a double sewing-machine or shoemaker's stitch, by the use of a strong needle, fixed in a handle, with the eye near the point. The divided peritoneum is carefully adjusted by a continuous animal suture, and the pedicle is returned to the pelvis. The abdominal wound is closed, and where drainage is deemed advisable it is effected through the vagina.

The advantages claimed are:

1st. An aseptic operation and wound.

2d. Very little loss of blood and security from subsequent hemorrhage.

3d. A pedicle safe from infection.

4th. The subsequent condition of the pelvic organs far better than by fixation of the pedicle.

DR. CALEB R. REED, of Middleport, O., read a paper on

THE INTRAUTERINE STEM PESSARY AS AN EMMENAGOGUE.

The position taken in the paper was, that cases of amenorrhea and scanty menstruation frequently occur, especially in young women, from torpor of the uterus and ovaries, where the general health seems good, and in which general treatment has failed to restore the function. In these cases, the stem may be of great advantage, and if persisted in will rarely fail to restore the lost or suspended function. Its judicious use is perfectly safe, and free from the objections urged against other forms of local treatment.

DR. DANIEL T. NELSON, of Chicago, read a paper on

THE TREATMENT OF UTERINE MYOMA BY MEANS OF ERGOT.

The author made a good argument for this mode of treatment.

A paper by DR. M. D. SPONTON, of Hanley, England, was read by Dr. Edres, of Manchester, England, on the subject of

CYSTITIS IN WOMEN.

He cited the local conditions leading to cystitis in women, among which are enumerated diseased states of the uterine ap-

pendages, bands of adhesions dragging upon the bladder, and some of the affections causing obstruction to the passage of the urine, which, often obscure and trivial in themselves, are not infrequently overlooked.

DR. WILLIAM L. REID, of Glasgow, Scotland, read a paper on

THE REMOTE RESULTS OF SHORTENING THE ROUND LIGAMENTS.

He had performed the operation eighteen times. He gave the opinions of the authorities, mostly British, the majority of which were unfavorable to the operation. The discussion which followed his paper was also rather against the procedure.

Afternoon Session.

DR. J. H. KELLOGG, of Battle Creek, Mich., read a paper on

ALEXANDER'S OPERATION,

and reported twenty cases. He favored the operation.

DR. W. C. WADE, of Holly, Mich., read a paper on "Displacements of the Uterus."

DR. JOSEPH TABER JOHNSTON, of Washington, D. C., read a paper on "The Treatment of Commencing or Threatened Peritonitis by Brisk Purgation,"

PROFESSOR VULLIETT, of Geneva, Switzerland, had two papers, "Progressive Uterine Dilatation" and "The Buried Suture with Iodized Silk in Vesico-vaginal Fistula." They were read in English by Professor Cordes, of Geneva.

DR. ADDINELL HEWSON, of Philadelphia, Pa., read a paper on "Abdominal Surgery."

DR. E. H. TRENHOLME, of Montreal, Canada, read a paper on "Extirpation of the Uterus for Bleeding Myoma."

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Meeting of May 18th, 1887.

The President, GUSTAV ZINKE, M.D., in the Chair.

DR. WM. H. TAYLOR read a paper entitled

SOME POINTS IN RELATION TO PREMATURE CHILDREN.¹

DR. A. J. MILES agreed with the views expressed by the essayist, but regarded the opinion of one author cited in the paper, that the temperature in which the child is to be kept should be 65° F., as erroneous. In one case of premature birth, the child being only six and one-half months' of utero-gestation, a temperature less than 90° was found to endanger the life of the fetus.

¹ See Original Article, page 1022.

It was carefully wrapped in cotton, kept constantly near a fire, and the temperature of 90° was kept up by the use of warm bottles applied to the child. This was kept up for three weeks before it was found safe to reduce the temperature to 80°. It is difficult for nurses to remain for a long time in such a temperature, hence the child should be placed in a separate room warmed to this degree. The child just mentioned was thus maintained alive and at the present time is eight years old, large and well developed, and going to school. The mother of the child had two miscarriages previously, one at three and the other at five months. Extreme anxiety was therefore felt in regard to the fate of this child, and extraordinary measures taken to keep it alive.

The speaker failed to notice any allusion in the paper to the method of incubation now practised in France.

The suggestion by the essayist, that the premature infant should be fed with the spoon, was proper, and the speaker indorsed it for the reasons given.

DR. JULIA W. CARPENTER said she agreed with the essayist and those who discussed the paper. She considered it a good plan to wait for the cord to cease pulsating before ligating it, and had adopted it in her practice from the first, as she had been so taught. One good result, claimed by the advocates of this method, besides that mentioned by the essayist, is that the child is much less disposed to colic. Her experience seemed to harmonize with this claim, as in her practice a colicky child was so far the exception.

Premature children, as well as feeble ones at term, she had cleansed by anointing with some unctuous substance and thoroughly wiped, and not washed until the next day or later. An anointing with goose grease or, now, lanolin was kept up every day until the child could do without it.

Wrapping in cotton without any attempt at dressing, she agreed with the essayist, was the best method. The child was not fatigued with so much handling, better watch could be kept over the warmth of the body, and the bottles of hot water kept better applied.

The chief point, however, is to attend to the details one's self, as otherwise they may not be properly attended to. Others sometimes think because a bottle of hot water is near a child, it must necessarily be warm, but on inspection the feet may be found blue with cold.

DR. E. W. MITCHELL said some of the suggestions made by the essayist were novel to him. He too thought it strange that while so much attention was given to prolonging gestation, so little care was bestowed upon the untimely product of conception. One important factor is the inherited bad constitution of the child. If it is born of unhealthy parents and the premature labor is due to disease, all care may not succeed in keeping it alive. Late ligation of the cord is of great importance; the speaker delayed tying the cord until cessation of pulsation in nearly all cases, and not infrequently he waited until the placenta was expelled.

Another element of danger to the new born infant is the sudden change of temperature caused by long exposure in the first washing. He did not allow premature infants to be washed, but

had them simply anointed and wrapped in warm cotton. There is no necessity for clothing for a number of days. An incubator is a good arrangement, but unfortunately cannot be just at hand when needed. Such an apparatus might indeed be provided and held in readiness in cases when labor is induced. If greater attention were given to premature children, the indication for the induction of premature labor would be increased, especially for contracted pelvis, etc., because the danger of losing the child would be lessened and the operation instituted therefore with less hesitancy.

DR. J. G. HYNDMAN likewise agreed with the previous speakers, but he was struck more especially with the essayist's remark that so serious a disease as pneumonia could be present without showing any marked symptoms, as fever or cough. If this be so, would not this want of reflex power also act unfavorably on the child in the act of swallowing, by causing strangling? He would also like to know if there were any other reasons for delaying the tying of the cord besides the supposition that the child thus gained more blood? Is it really true that the child thus gains more blood?

DR. W. H. WENNING remarked that whilst he indorsed most of the measures recommended by the essayist and the other speakers for the protection of the premature child, he must direct attention to the many difficulties that present themselves in their execution. First of all is the sudden loss of temperature to the child immediately after its expulsion. No matter how warm the lying-in room may be kept, the difference between the intra-uterine temperature and that of the room is considerable: if we add to this the time elapsing during which the child lies exposed in the cold fluid between or behind the mother's thighs whilst the attendant is waiting for the end of the pulsations in the cord, the danger becomes still greater. The speaker would admit that the child would gain more blood if tying the cord be delayed until it has stopped beating, as this fact has been demonstrated clinically, yet it is a question if this gain is not more than counterbalanced by the loss of temperature incurred to the child during this delay. In healthy and full-term children he recommended and adopted the practice of waiting for the cord to cease pulsating before ligating it, but it is questionable if this practice is always proper in premature deliveries. Consequently, to prevent this sudden loss of temperature, either the child should be at once removed after birth and placed in a warm bath, or it should be received at least in well-warmed cloths and thus protected from the chilling influence of the moist bed-clothes during the time that the necessary steps are taken in tying the cord.

A second difficulty presents itself in maintaining the medium surrounding the child—be it air or liquid—at the proper degree of heat. The temperature in which the child is subsequently to be kept should approach as nearly as possible that of its intra-uterine existence, for it must be remembered that the child in utero has a higher temperature even than its mother. Raising the temperature of the room to the proper degree of heat is not sufficient, for there must also be a certain amount of moisture, and it is a well-known fact that heating the atmosphere also deprives it of its moisture in inverse proportion to the elevation of tempera-

ture—the more heat the less moisture—but moisture is just as important for the preservation of the premature child as is heat. Almost all the different measures of maintaining artificial heat usually resorted to lack this one important element—moisture. The *couveuse* is undoubtedly an excellent arrangement, hot-water being used as the heating agent, but the speaker was of the opinion that if the premature child could be kept continuously immersed in a warm bath, heated to the proper degree, up to the end of normal gestation, its extrauterine existence would be the nearest approach to its former intrauterine life, when it is constantly surrounded by the liquor amnii. As water, however, loses its heat by radiation much more rapidly than air, it would be necessary to provide an arrangement for a constant afflux of hot-water, regulating the bath by the thermometer. The cooled and soiled water could be similarly withdrawn by means of a discharge pipe.

If dry cotton be used as a warmer, its frequent change rendered necessary by the discharges of the infant is a source of repeated exposure.

Probably the greatest difficulty lies, however, in the nourishment of the premature infant. Since it has now an existence of its own, it must be nourished, but generally the child is unequal to the task of swallowing. As it is too feeble to suck, it should be fed with a spoon, the mother's milk being used for that purpose. Unfortunately, however, the breast milk is not secreted as early and in as great abundance in a premature as in a normal delivery. The speaker observed this fact repeatedly, and the two last cases he attended perished because the mother's milk was not secreted in due time and in the proper quantity.

With all these adverse circumstances it becomes a difficult problem to rear a premature child; nevertheless we ought not to despair as long as there is evidence that the child is otherwise normal and healthy. We know that weight and size in newly born children are only relative; one child at seven months being perhaps as well developed as another at nine. In such an instance, with due care there ought to be no difficulty in keeping a premature child alive, particularly if the miscarriage was due simply to an accident and no disease of the mother. Sometimes, however, miscarriage is itself the expression of disease, either of the mother or child, and then the child is already doomed when born. Two new physiological functions, respiration and digestion, complicate matters and render the life of the child still more uncertain, for a premature child is generally unequal to the new task imposed upon it during its now extrauterine life.

DR. GUSTAV ZINKE thought some practical hints in the method of applying the cotton to the premature infant ought to be offered; both how much cotton was to be used and how it was to be applied. A case of premature delivery occurring in his own family suggested these particulars to him. A little girl, delivered in the last week of the seventh month, weighing less than two pounds and measuring less than one foot, was born with the breech presenting. During the delivery the head was caught in the os and with difficulty liberated. The child was nearly lost during this procedure but after extraction its cord was felt still feebly beating and life remained. It was anointed with warm olive-oil and wrapped in a two inch thickness of absorbent

cotton. The child was laid upon this cotton, which was about twice the length of the infant, so as to occupy a little more than half the length of the cotton, the remaining portion was then turned over the anterior surface of the child up to the chin and the whole secured by several pieces of twine, *i. e.*, one around the neck, two around the body including the arms, and one around the knees. It was then covered with flannel secured with safety-pins; the face being the only part that was left exposed, whilst the head was covered like the rest of the body. The cotton was changed twice a day. Feeding was done by means of a spoon, with milk from the breast of the wet-nurse, as the mother had no milk. The latter's milk appearing in abundance at the end of ten days, she nursed it herself with great regularly and frequency. From this time on, until the child was nine months old the mother scarcely had it from her lap, keeping it at night by her side. In spite of this great attention and care it was hardly hoped that the child would survive. It had several spells of sickness, including inflammation of the bowels and pneumonia, but yet recovered and is now three years old, strong, healthy, and weighing thirty-five pounds.

The cause of the miscarriage was a blow on the abdomen in endeavoring to prevent another child from falling from the bed on to the floor.

DR. W. H. TAYLOR, in concluding the discussion, said that the first speaker had probably misunderstood him in regard to the proper degree of temperature for the premature child. He had stated in his paper that Tarnier had placed it at 64° F., but the essayist himself objected to this. He agreed with all the other speakers that the child should not be washed or clothed, but simply wrapped in cotton and kept in this manner as long as possible. Every removal causes radiation of heat and consequently lowering of temperature. A good receptacle for the child is a basket which protects it from draughts of air and which may be easily placed near the fire for warmth. There are great objections to placing the infant by its mother's side for the purpose of keeping it warm, because it must then inhale also a vitiated atmosphere. The child should be kept in a well-warmed and ventilated room by itself. The greatest point of importance is nutrition. All the digestive organs in a premature infant are imperfect and not adapted to digesting food. Hence the latter should be predigested. In answer to the possibility of strangulation raised by one of the speakers, he would answer that Widerhoffer has suggested the passage of a tube through the nostril into the pharynx for the purpose of feeding, by which this danger is overcome. The most important reason for delaying ligation of the cord is for the purpose of allowing the child to derive more blood from the mother.

**TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF LONDON.**

Wednesday, June 1st, 1887.

JOHN WILLIAMS, M.D., *President, in the Chair.*

A CASE OF CESAREAN SECTION.

By DR. CHARLES J. CULLINGWORTH.—A rachitic dwarf, aged 30, four feet two inches in height, was sent at full time to the author. The pelvis was generally contracted and flat, the estimated conjugata vera being two and a quarter inches. The child was alive. There was great albuminuria, with edema of the abdominal wall, labia, and legs. Labor began spontaneously, and when the os uteri was as large as a florin, Cesarean section was performed with full antiseptic precautions. The child weighed 5 lbs. 9 oz., and was extracted by one leg: it was partially asphyxiated, but soon recovered. After clearing the uterus of the placenta and membranes, its lower segment was constricted by an elastic ligature. The loss of blood was trifling. The uterine wall was united by four deep silk sutures, and the peritoneal edges by six finer superficial silk sutures.

The patient died twenty-nine hours after operation, the temperature remaining under 100° F. until two or three hours before death, when it rose to 100.8° F., pulse 140.

Post mortem there was no sufficient cause of death found except acute parenchymatous nephritis.

THE PRESIDENT wished to know if the kidneys and urine had been examined microscopically, and the quantity of urine passed after delivery. The low temperature was characteristic of uremia, and he thought there was fear of carbolic poisoning where the kidneys were badly diseased.

DR. HORROCKS thought death was probably due to shock, and that the elastic ligature pinching the plexuses of nerves as they enter the uterus would increase this.

DR. J. PHILLIPS asked by what sign the seat of the placenta was determined, and why the uterus had been brought outside the abdomen before extracting the child.

DR. W. DUNCAN thought it was better to place the elastic ligature around the cervix before opening the uterus.

DR. TALFOURD JONES did not think that so large a dose as $\frac{1}{4}$ grain of morphia should be given hypodermically to a person of four feet two inches, as the lethal dose would be in proportion to body weight.

DR. LEWERS thought that, although improved results in Cesarean section had been reported from abroad, this success had not been met with in this country, and he preferred the old rule of

delivery when possible *per vias naturales*. In the case under discussion this was possible.

MR. MEREDITH thought that the Porro operation might have been preferred, with a view to insuring against the possibility of a future pregnancy.

DR. MATTHEWS DUNCAN said that neither he nor perhaps any one in this country had large experience of Cesarean section, and that it was to Germany that we must look for the guidance of experience and such wonderful success as those of Säger, Leopold, Credé, and Gusserow.

It was such success alone that should and would lead us in this great practical question, and they showed at present a less mortality with Cesarean section than with Porro's operation. Both operations had a place in obstetric surgery, and he thought Dr. Cullingworth had rightly selected Cesarean section; while in the case to which Mr. Meredith had alluded, as there were several large fibroids, Sir Spencer Wells had wisely selected Porro's operation. No amount of eloquence about the abolition of craniotomy would help forward that much-to-be-desired result. There had been much of such talk. Nothing but success in some alternative operation would do the least good. He approved of the course adopted by Dr. Cullingworth, and thought the renal disease was probably the chief cause of death.

DR. CHAMPNEYS said that the seat of the placenta could not be diagnosed by uterine souffle, and that often there was no sound at the seat of implantation. Dr. Cullingworth replied.

THE MECHANISM OF THE THIRD STAGE OF LABOR.

III. *The Separation and Expulsion of the Membranes.*

By DR. FRANCIS H. CHAMPNEYS.—The author reviews the literature of the subject, and the various views expressed. These amount to four: (1) The peeling off of the membranes by the traction of the descending placenta. (2) Separation by effusion of blood. (3) Wrinkling of the membranes by uterine contraction and retraction. (4) Separation of the lower pole of the ovum by retraction of the lower uterine segment.

The author dismisses (2), on the ground that the quantity of blood lost in an ordinary labor is too small to produce this result, and that, with the usual eccentric implantation of the placenta, this mechanism would fail of its purpose. He criticises the expression "weight of the placenta," as having influence on the mechanism in the recumbent attitude, and also the expression "leaving (the process) to nature," as applied to its course in the recumbent attitude.

He explains the natural process as follows:

1. Separation of the lower pole of the ovum by retraction of the lower uterine segment during the "premonitory" stage of labor. This requires a complete "bag of waters."

2. Wrinkling and partial separation of the membranes by diminution of the internal surface of the uterus. This requires some escape of the waters.

3. Peeling off of the membranes by the traction of the descending placenta. This requires the evacuation of the uterus. The rupture of the membranes at the proper time is an integral part of the normal process. The first stage in the process seems calculated to prevent a very common defect, viz., the adhesion of the membranes round the lower uterine segment.

TUBO-OVARIAN CYSTS.

By DR. WALTER S. A. GRIFFITH.—A tubo-ovarian cyst, usually unilocular, which communicates, by a considerable orifice, with the adherent fimbriated extremity of a dilated tube; the uterine end of the tube, though pervious, is rarely dilated, so that though there is a potentially free communication with the uterine cavity and vagina, it is an exceptional phenomenon for fluid to escape in this manner.

In this paper reference is made to the scanty literature of the subject, and an abstract is given of all recorded cases obtained, numbering nineteen, a description is given of a specimen exhibited, and the subject of their formation is discussed.

The literature of the subject is comprised in the original papers by Adolphe Richard, and in recent ones by Olshausen and Burnier.

The specimens are divided into two groups, a small group of four in which the ovarian portion of the cyst is multilocular, the tube communicating with one loculus, and a group of eighteen, in which the cyst is unilocular.

The question of unilocular cysts of the ovary is discussed, and these are identified with the larger unilocular cysts described by Olshausen.

The subject of the formation of tubo-ovarian cysts is subdivided in the following manner and receives the following answers:

That the dilatation of the tube, and the formation of the ovarian cyst are usually secondary and not primary factors in the formation of tubo-ovarian cysts.

That the application of the tube to the ovary is physiological or possibly accidental.

That the permanent adhesion of the two is effected by adhesive inflammation.

That the communication between the two is generally either a primary occurrence or takes place at a very early period in the formation of the cyst.

References to the literature of the subject are given.

The discussion of the two papers was deferred till the next meeting.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] NOVEMBER, 1887. [No. 11.

ORIGINAL COMMUNICATIONS.

A CONTRIBUTION TO THE STUDY OF CYSTS OF THE VAGINA.
WITH THE REPORT OF A CASE.

BY

GEORGE WOODRUFF JOHNSTON, A.M., M.D.,

Lecturer upon Operative Gynecology in the National Medical College; Director of the Woman's Clinic of the Central Dispensary and Emergency Hospital; Member of the Alumni Association of the Woman's Hospital in the State of New York,

Washington, D. C.

(With six woodcuts.)

THERE are two kinds of vaginal cysts, those which contain *liquid* and those which contain *air*.

The following pages are devoted solely to a consideration of cysts of the vagina with liquid contents. The literature of the entire subject is, however, appended.

1. *History.*

Haller, who wrote in 1765, said: "I have found hydatids in the vagina, which fact contradicts the opinions of Morgagni." Haussmann, a century later, maintains that by hydatids Haller meant cysts, and that he would have framed his views in different language had not the existence of these for-

mations been recognized long before his time. Safford Lee is inclined to regard Sir Astley Cooper as the one who first took cognizance of and described cysts of the vagina, and Meissner (1848) is of the same opinion; but Winekel (1871) was unable to find any reference to them in his works.

Within the last fifty years, there have appeared from time to time, mainly in the pages of foreign periodicals, brief notices of this somewhat rare affection, while Huguier in 1847, and Winekel in 1871, presented the fruits of more careful and elaborate study.

An analysis of the histories of one hundred and sixty-two cases of vaginal cysts forms the basis of the present contribution.

2. *Pathological Anatomy.*

Cysts of the vagina have been found with a varying degree of frequency by different observers. While it is believed that they are by no means rare or phenomenal (Klebs), and occur more often than is usually supposed (Hart and Barbour), Breisky has encountered but eight true and one doubtful case, and Duncan thirty. Fritsch considers that in thorough examinations, such as those made of prostitutes, vaginal cysts are met with in about one per cent of all cases examined.¹

Others have found them more common; thus Graefe saw in one year nearly twenty cases, while Von Preuschen in thirty-six bodies, found cystic formations in the vagina six times.

At the Woman's Clinic of the Central Dispensary in this city, five hundred patients were examined during the past year, and vaginal cysts found in but one case.

Cysts of the vagina usually occur singly; occasionally two may be present at the same time, or more rarely still, three, four, five, or even six.

Opinion is divided as to the vaginal wall oftenest the seat of cysts. Two of the earlier observers, Huguier and Ladreit, maintain that the anterior wall is most frequently affected—compared to the posterior as 13:8—and the results obtained by Winekel would seem to support this view, which is further confirmed by Dupuy, Eustache, Guérin, Hart and Barbour, and others. There are, however, some, Von Preuschen, Dentu,

¹ In 11,140 women with tumors of the genitalia, cysts of the vagina were found 8 times (Gurlt).

and Froment, who believe that cysts are most usually met with on the posterior wall of the vagina, and Klebs in thirty cases found the posterior wall named twenty times. The lateral vaginal walls are less commonly the seat of cystic disease than either the anterior or the posterior; all are agreed on this point.

In the one hundred and sixty-two cases collected, the tumor was seated on the anterior wall sixty times, on the posterior fifty-seven times, and on the lateral walls eighteen times. The right and left lateral walls were affected with equal frequency.

It is quite possible for cysts to be present simultaneously on opposite walls of the vagina, as in the cases of Bidder and Wassilly, Collardot and Eustache; and in the histories detailed by Burke, Graefe, Gosselin, Næcke, Pichancourt, and Tillaux, we find illustrations of the fact, emphasized by Graefe, that cysts, particularly if of large size, do not lie exclusively on one wall of the vagina, but encroach upon those adjoining, so that it becomes more or less difficult to ascertain their true seat of origin.

Cysts are not always located on the same part of the vaginal wall. The researches of Winckel have led him to believe that the most usual seat of cysts of the vagina is in the lower half of that organ, two-thirds of all cysts being there found. Breisky, Dentu, Duncan, Dupuy, Hart and Barbour, and Schulte are of the same opinion. So far as we are aware, Von Preuschen is the only observer who regards the upper third of the vagina as the common location of cysts.

From our own observations it would seem that one meets with these tumors almost as often in the upper as in the lower third, for in one hundred and sixty-two cases the cyst occupied the lower third in thirty-eight, the upper third in thirty-one; while the middle third was involved in seventeen, and the entire vaginal wall in eleven.

Certain vaginal cysts, especially those that are of small size or are deeply seated, project so little into the lumen of the vagina as almost to pass unrecognized, even on the most careful examination. As a rule, however, when furnished with firm walls, or distended with fluid, they are quite perceptible as round, hemispherical, or globular elevations, rising sharply above the plane of the surrounding vaginal surface. Occasionally the shape may vary somewhat, and the cyst be ovoid, or

elongated in a direction parallel with, or transverse to, the long axis of the vagina.

The mucous membrane covering vaginal cysts often preserves its normal appearance and color, and is said to be rosy, reddish, bluish-red, or red; still it is frequently spoken of as being pale-red, or as paler than the surrounding mucous membrane. Again, if it be much stretched, it loses its characteristic wrinkles, and becomes smooth, shining, and glossy.

Along with the proper cyst wall, which it may cover or of which it may form an essential part, the mucous membrane may become so thinned that the cyst acquires a whitish,

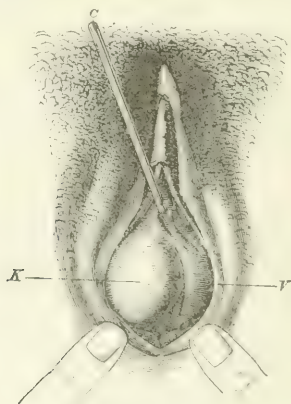


FIG. 1. (After Sevrat.)

bluish-white, or greenish-white appearance, not unlike that of a serous membrane or the outside of an ovarian cystoma. It has also been likened to a distended intestine, or to a glans penis habitually uncovered by prepuce. When a cyst prolapses and protrudes through the vulvar fissure, the mucous membrane covering it exhibits the same epidermoidal change which affects either vaginal wall under like circumstances, or it may become inflamed and show superficial ulceration, as is seen when two cysts lie directly opposite each other in the vagina.

The cysts may ever remain small, the size, let us say, of the

space, natural or artificial, in which the fluid accumulates. On the other hand, when the conditions favorable to growth are present, they may increase in size. After a certain time, the cystic sac having reached the limit of its capacity, further accumulation will cease, and the enlargement remain stationary.

Thus in one case after four weeks, in another after six weeks, in another after three months, and in another after twenty-two years, no increase in size was noted.

In any event, all growth is slow,¹ as is the rule in cystic tumors generally, and the patient may be conscious of the existence of a vaginal cyst for a considerable length of time.

Warren records a case in which the vaginal tumor was observed for several months; Gosselin, for 5 or 6 months; Hutchinson, a cyst which for 18 months had gradually increased in size; Bradfield, for nearly 2 years; Simpson, for 3 years; Kaltenbach, for 4 years; Kolaczek, for 5 years; Fürst, a cyst which little by little had increased for 5 years; Watts, for 6 years; Warren, for 7 years; Eustache, for 8 years; Huguier, for 17 years; Tillaux, for 22 years; Lee, for a number of years.

The only exception to this rule is furnished by Hörder, who mentions an instance in which a cyst, within a half-year, grew with great rapidity.

There are several conditions which influence rapidity of growth in this species of cystic disease, notably the density and elasticity of the walls of the cavity in which the fluid accumulates, and the activity of this accumulation. The first of these conditions is modified by the anatomical position of the starting point of the cyst, and the second, by various physiological and pathological processes. The prolonged hyperemia, which is a necessary accompaniment of utero-gestation, is a potent factor in hastening the development of vaginal cysts; they rapidly increase during pregnancy, especially within the last few weeks, and attain their maximum size at the moment of labor.² After delivery, there may be further enlargement, occurring swiftly or slowly, or the cyst may undergo a species of involution and grow smaller. The irritation of excessive sex-

¹ Winckel says a cyst may require seven or eight years to reach the size of a hen's egg, and quotes three cases in illustration.

² Cases of Lever, Moliner, Mundé, Pichancourt, Schulte, and Warren.

ual intercourse, and inflammation of the vaginal texture, likewise stimulate normal and morbid secretion, and accelerate the growth of cysts. After the menopause, when the vital activity of the sexual organs is diminished, cysts develop slowly.

When the conditions just mentioned as favoring growth are present, especially if the cyst be deep-seated and have firm walls, it will decidedly increase in size, and may even reach enormous proportions.¹ In describing the size of cysts, observers have used, for the sake of comparison, the names of a large number of natural objects with which we are all familiar, and only in a very few instances have exact measurements been made. As a rule, the cysts described have a relatively large size: Winckel says that three-fourths of all cysts are from the size of a walnut to that of a fist, while Näcke believes that tumors which are of large or medium size, are found three times as often as the smaller ones. This circumstance is no doubt due, as Winckel points out, to the fact that when cysts are small they generally pass unrecognized.

At whatever point cysts of the vagina originate, the tendency of growth is naturally in the direction of least resistance, or first toward the lumen of the vagina, and then toward its exit. This manner of development is further made necessary by the fascial attachments of the vagina, by the force of gravity acting from below, and by the negative resistance or positive pressure of the adjacent and overlying hollow organs—the bladder, intestines, and rectum. Still, it is possible for the cyst to grow upward, and to present both as a vaginal and as an abdominal tumor, or to develop backward and form quite a distinct prominence in the rectum.

Cysts of the vagina are most often sessile, but if the tissues at their base be lax, the constant traction will in time produce pediculization. On account of the greater firmness of the attachments of the anterior vaginal wall, it seldom yields, and cysts seated upon it are apt to remain sessile. The posterior wall, however, not so stably fixed, is, with greater frequency than the anterior, the seat of polyp-like cysts. Deep lying cysts, as well as those that are superficial, may be thus affected.

In 162 cases of vaginal cysts, there were 16 pedunculated, of which number 3 sprang from the anterior, and 11 from the

¹ Cysts have been described which were as large as a fetal head at term, others are said to have been "as large as a child's head."

posterior wall; the origin of the remaining 2 was not specified. The pedicle in 3 cases is described as large, and in 1 the size of a little finger, and in 1 extensible and of an hour-glass shape, in another as being like a hard cord. On the other hand, if the tumor continues to increase in size, and there be no extensibility of its base, it may so drag upon the vaginal wall as to cause it to prolapse and with it the uterus also. Other influences favoring descent are, in addition, often active.

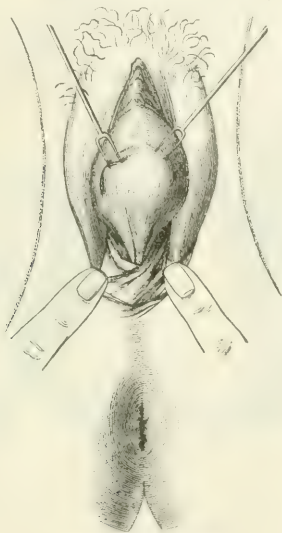


FIG. 2. (After Fürst.)

Prolapse of the vaginal wall, manifestly or presumably the result of the weight of the tumor, is to be met with in 12 of 162 cases, and prolapse of the uterus, attributable to the same cause, in 6.

A cyst which is seated low upon the vaginal wall, or one that has become pediculated or prolapsed, may present at the vaginal outlet, or protrude for some distance between the labia, or even hang downward between the thighs.

It is maintained that cysts of the anterior vaginal wall do

not usually extrude from the vulva (Dresch). In 32 cases coming under our notice, in which the tumor occupied the vaginal inlet or depended from it, the cyst in question was found to originate on the lateral wall twice, on the posterior wall 12 times, and on the anterior wall 17 times: in 1 instance the seat was not specified.

Cysts of the vagina are occasionally quite movable, and those which from any cause escape from the vulva, readily re-enter it and disappear, when pressure is made upon them. This has been observed in nineteen instances, and may occur spontaneously when the patient assumes the recumbent posture. Protrusion in all cases is induced or rendered conspicuous by coughing, crying, by efforts at micturition or defecation, by

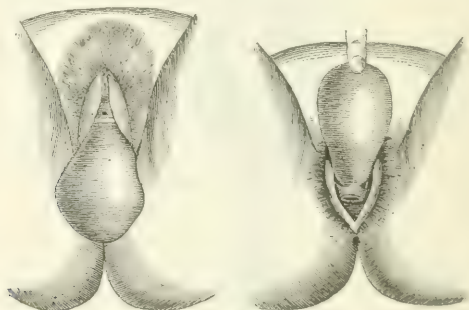


FIG. 3. (After Watts.)

bearing down or straining, or when the individual stands or walks. Rarely (in four cases), pressure upon the tumor failed to alter its position, or did so but slightly and with difficulty.

On examining cysts of the vagina by touch, it is found that the mucous membrane investing their vaginal aspect glides freely over them, except when it forms an integral part of the sac wall, or has become united to it by some previous inflammation. The impression given to the examining finger by the cyst itself has been variously described: it has been recorded in fifty-seven instances.

Ordinarily it is soft, elastic, and fluctuating, while in seventeen cases it was said to be firm, resistant, and devoid of fluctuation, and in one, the growth felt like a hard, fibrous tumor.

Inflammation of the sac, and the change of the cyst into an abscess, may result from the injuries of labor,¹ or in the case of those tumors that have escaped from the vaginal inlet, as a consequence of repeated blows between the thighs on walking.² It is said that the friction of two cysts seated opposite each other on the vaginal walls will produce a like issue, but in the only three cases illustrative of this condition of which we are aware, no mention is made of any such pathological alteration.³ The irritation of simple exploratory puncture is often enough to induce inflammatory changes,⁴ but in many instances it is not always easy to discover the true exciting cause.

Cysts of the vagina may burst spontaneously or be ruptured, and discharge their contents into the vagina, urethra, or through the perineum. Fourteen cases of this accident are to be found in recent literature, the vagina being involved in eleven, the urethra in two, and the perineum in one. Perforation is usually a consequence of inflammation of the walls of the sac, but the pressure of the descending head of the child during labor, or injuries otherwise inflicted, may also produce rupture of the cyst.

After the cyst has been evacuated it may disappear, or what is more likely, the opening will close and the cyst refill, until it sometimes attains dimensions equal to those it originally possessed. On the other hand, the opening may remain patulous, and form the terminal extremity of a sinus, lined by unhealthy granulations, and discharging continuously a fetid, purulent fluid.⁵

Now let us turn to a consideration of the more minute structure of cysts of the vagina, and of the various theories that are entertained as to their mode of origin.

Of late the opinion has been repeatedly expressed that, through microscopical examination of the walls of these formations, and by this means alone, could the vexed question of their mode of origin be settled. The same hope was entertained by older observers, but it was through a study of the contained fluid that they sought to reach this end. It is to be

¹ Case of Hickinbotham.

² Case of Dentu.

³ De Sinéty. Cases of Bidder and Wassily, Collardot, and Eustache.

⁴ Cases of Gosselin, the Author, and Lee.

⁵ The rupture of cysts is further discussed by Collardot, Eustache, Froment, Klebs, Mundé, De Sinéty, Thalinger, and Winckel.

feared that in neither way can conclusions free from doubt be attained.

Cysts of the vagina, whatever be their origin, have, most commonly, a proper and independent wall. When the cystic development is due to an accumulation of fluid in a cavity or space which has distinct walls of its own, this is easily understood. When there is an effusion of fluid into meshes of tissue, as is seen in the case of loose vaginal surroundings, the irritation incident to its presence sets on foot processes resulting in encapsulation.

The external or vaginal aspect of all cysts is clothed with that form of epithelium which invests the mucous membrane of the vagina. Besides this, any or all of the tissue elements of the vagina may be found in the cyst-wall, its thickness depending on the number of these tissue layers present, and the latter upon the situation of the point at which the accumulation originates, and the degree of pressure which it exercises. Thus the wall may be so thin as to be quite translucent, allowing the small vessels ramifying in its structure to become apparent, or so thick that it will fail to collapse even after puncture and withdrawal of the cystic contents. Still, as has been remarked, the cyst-wall is really thicker than one would expect from its external aspect, for the appearance of translucency is in great part due to the peculiar coloration of the vagina. In a large number of cases the cyst is simply said to have had a thick or a thin, a strong or a weak wall, but from those in which measurements have been made, 0.5 mm. is seen to be the minimum, and 1 cm., the maximum thickness observed.¹

As a rule the interior aspect of vaginal cysts, which may be

¹ Case of Lebedeff, thickness 0.5 mm.

" "	Graefe	"	0.7 mm.
" "	Lebedeff	"	1 mm.
" "	Ladreit	"	1-4 mm. quoted by Winckel.
" "	Graefe	"	2 mm.
" "	Dresch	"	2 mm.
" "	Graefe	"	2-3 mm.
" "	Gotthardt	"	2-3 mm.
" "	Kolaczek	"	3-5 mm.
" "	Schulte	"	4-5 mm.
" "	Hörder	"	5 mm.
" "	Lisfranc	"	7 mm. quoted by Winckel.
" "	Graefe	"	1 cm.

either smooth and shining or rough and covered with papillary outgrowths, is provided with epithelial investment, although cases are recorded in which all such was wanting (Huguier, Ladreit, Lebedeff, and Verneuil).

Now, as has been elsewhere stated, the hope was entertained that through a careful microscopical investigation of the walls of vaginal cysts, and especially by the characteristics, thus revealed, of their epithelial lining, some accurate information could be gained as to their etiology, and an anatomical basis for their proper classification established. The fact, however, that two distinct varieties of epithelium can be present on the internal face of one and the same cyst, as Ruge has clearly demonstrated in three of Graefe's cases, and as has also been observed in those of Kaltenbach and Lebedeff, does not a little to quench this hope.

Furthermore, we have convincing evidence before us, that the very nature of the epithelium may be changed by the mechanical pressure of the contained fluid. By this means, as has been pointed out by Graefe, a cylindrical-celled epithelium may be so flattened as to assume a simple pavement form, and this by multiplication of its upper strata becomes in turn a many-layered pavement epithelium—a process which is met with in cysts elsewhere, and has its prototype in the embryonal development of the vagina.

If, therefore, these facts be so, if one variety of epithelium can be changed by pressure into another, and if two separate and distinct kinds co-exist on the inner surface of the same cyst, then most certainly the epithelium lining a cyst can furnish no clue to its origin, nor can different species predicate different modes of origin. An analysis of the other elements that go to make up the cystic wall furnishes no better guide, for they, too, may become so thinned from pressure that their layers are indistinguishable. With these considerations in mind, it is readily seen how futile would be the attempt to classify cysts of the vagina on a purely histological basis.

Cysts of the vagina may be roughly divided into the true and the false; into those which originate in the substance of the vaginal wall, and those which have their starting point in some one of the neighboring tissues or organs. Such an arrangement is, however, unsatisfactory, for many cysts beginning in the peri-vaginal cellular tissue, let us say, ultimately form tumors

that are distinctly vaginal. Again it has been proposed to classify cysts as mucous, interstitial, and subserous or extra-vaginal; as superficial and deep: or to distinguish those originating in a pre-existing physiological space or cavity from those which develop in a space or cavity of pathological origin.

In view of the existence of the mechanical changes but just alluded to, it will readily be seen that many of these distinctions are largely fanciful.

Many theories have been proposed to explain the origin of vaginal cysts. It is said that they develop in glands through retention and accumulation of their secretion, and this belief was formerly thought to be the only one at all tenable. But are we sure that the vagina is provided with glands? A contribution of great value, bearing upon this subject, has appeared since the publication of Winckel's treatise. We may be pardoned, perhaps, in briefly alluding to it.

In a preliminary paper in 1874, and again in a more elaborate article in 1877, Von Preuschen, of Greifswald, reviews the opinions that have been expressed in regard to the presence of glands in the vagina, and the suggestions made to account for the development of vaginal cysts. He then gives in detail, in the second of the two contributions above referred to, the results of his own elaborate investigations, made in the endeavor to settle these vexed questions. He examined in the Pathological Institute of Basel the sexual organs of thirty-six cadavera, and five cases of vaginal cysts beside. His conclusions may be briefly summarized as follows:

The vagina possesses glands, which show a structure similar to the sebaceous glands of the vulva. In many cases they occur but sparsely, but can be demonstrated in nearly all.

These glands occur in two forms, of which the first is the more common.

Form A. Moderately deep and broad depressions (crypts), with tube-like, narrow, finger-formed appendages.

Form B. Single tube-like indentations; a crypt with a single finger-like appendage.

The interior of the upper part, vaginal end, or duct of outlet, of these glandular cavities is invested with a many-layered pavement epithelium with a substratum of cylindrical cells; the deeper part or terminal extremity, with a single layer of cells of a cylindrical type furnished with cilia. This is well seen in Fig. 4 in Von Preuschen's plate. Figure 5 (Von P.) represents the lower part of a gland enlarged: note single row of ciliated columnar epithelial cells.

The epithelium investing the vaginal mucous membrane is simply continued into these glands: in the crypts all three layers are seen; the two of pavement cells lining the sac, and the cylindrical cell layer exterior to them. In the finger-formed appendices, the deep cylindrical cell layer is continued, but the pavement layers have disappeared. As soon as the cylindrical cells are freed from the pavement cells clinging to them, they become somewhat higher and appear furnished with cilia.

A *membrana propria* in either form of gland is only indistinctly demonstrable.

Cysts of the vagina are retention cysts, due to a retention and accumulation of secretion in these glandular cavities.

Cystic degeneration is found more frequently in form A than in form B.

Form A.—Cysts may originate, first, either in the upper part of the gland alone, cysts of the ducts of outlet, in which case they are lined by a stratified pavement epithelium. There is nothing astonishing in a retention of secretion in these broad-mouthed insinkings. Analogies are found in cystic degeneration of the crypts of the bladder and the Lieberkühn glands of the intestines, and cysts may develop in a gland whose outlet is patulous (Virchow).

Second: Cysts may begin in the lowest portion of the gland alone, in one or more of the finger-like appendages; the crypt and a few of the terminal extremities not being implicated. In this case, the lining epithelium is composed of ciliated columnar cells.

Graefe believes that if the crypts are occluded, the appendages are occluded also, or cysts are developed in each separately and finally blend. In this case the wall would be covered in part with a cylindrical, in part with a pavement epithelium, as is sometimes seen in the same cyst.

Cysts of the appendages are found much more frequently than cysts of the crypts.

The mechanism of cyst-formation in these glands, described by Von Preuschen, is in no way different from the development of retention cysts in secreting cavities elsewhere. Lebedeff, in this connection, refers to cysts of the *portio vaginalis* and cervical canal formed by the stoppage of glands, whose existence in these parts is unquestioned. A hyperemic, irritated, or inflamed condition of the vaginal surface not only tends to increase the amount of the glandular secretion, normally very slight, but also prevents its escape, through an increase in size or proliferation of the cells of the most superficial tissue strata about the duct of outlet, and a consequent diminution in its calibre, perhaps ending in occlusion. The abnormal impulse to cyst-formation which thus increases the quantity of secretion and prevents

its free escape, is aided by the change in the constitution of the fluid necessarily accompanying any such process. Cells lining the peripheral ends of the ducts of outlet become stripped off and form, with constituents furnished by the altered secretion, a stopper or cork, which effectually obstructs the duct terminus and prevents the escape of the gland contents. On one occasion, Von Preuschen was enabled to remove in toto such a stopper or cork from the upper part of a glandular cavity. It consisted of epithelial cells in good condition and free nuclei which, formed together into a ball, filled up the lumen of the duct. The original impulse to increased secretion and retention will in time alone, or aided by the irritation and crowding induced by cyst-formation, affect the glandular cavities in close anatomical relation to the one primarily affected, so that we see cystic degeneration of many glandular spaces present in the same circuit.

Von Preuschen's investigations as to the presence of glands in the vagina appear to have been so carefully undertaken, his results seem so trustworthy, and his theory of the origin of vaginal cysts from these glands so captivating and in such perfect accord with pathological changes in other parts of the body, with which we are thoroughly familiar, that we are easily led to agree with him in his deductions. But if it can be shown that the vagina possesses no glands, then all theories of origin for vaginal cysts depending on the presence of such structures, fall at once to the ground.

It would, in this present paper, be inappropriate, indeed impossible, to record at length the views of anatomists in regard to the presence or absence of vaginal glands, or to review the various accounts that have been given of them. Many, whose names are associated in our minds with originality of research and accuracy of description, have expressed themselves very decidedly upon this question, and investigations especially directed towards this end have repeatedly been undertaken, but there is withal the most extraordinary diversity of opinion.

Cruveilhier, Dubois, Graefe, Guérin, Heitzmann, Henle, Henning, Hugnier, Huschke, Hyrtl, Jarjavy, Klebs, Krause, Ladreit, Lebedeff, Löwenstein, Luschka, Richet, Veit, and others maintain that the vagina is provided with some form of open gland or closed follicle.

On the contrary, Aeby, Collardot, Courty, Eppinger,

Eustache, Frey, Froment, Gallard, Kiwisch, Kolliker, Langer, Mandl, Näcke, Robin, Rokitansky, Ruge, Sappey, Scanzoni, Schulte, De Sinéty, Tyler Smith, Watts, and others consider the occurrence of vaginal glands doubtful, or deny their existence altogether. The investigations of Eppinger, Löwenstein, and Schulte are of more than ordinary interest.

We cannot positively affirm the existence of glands in the vagina as long as their presence is denied by trustworthy observers, and yet we are inclined to agree with those (Graefe, Lebedeff, Veit, and others) who admit that they occur, but consider them exceptional formations.

Duncan, Fritsch, Fürst, Gosselin, Hart and Barbour, Hegar and Kaltenbach, Hörder, Lebedeff, Pichancourt, Schröder, Veit, Virchow, and Winckel regard it as probable or certain that some, many, or all vaginal cysts are by nature retention cysts, developing in glands or follicles of the walls of the vagina, while De Sinéty, Schulte, and Watts consider such a theory doubtful or unfounded.

To Von Preuschen's description of the anatomical structure of cysts of glandular origin, already given, nothing need be added. A reference to illustrative cases, as, for example, that of Fürst, may prove interesting.

It is argued by Klebs that vaginal cysts, whether superficial or deep, are simply dilatations of the lymph channels which traverse the connective tissue stratum of the vaginal wall,¹ and that such cysts are invested with an endothelium akin to that which lines the lymphatic ducts. Graefe questions whether this method of origin could be made applicable to all cysts, since in such a large number we find not an endothelial investment, but a lining of a many-layered squamous, or cylindrical celled, epithelium. He further calls attention to the influence of the pressure changes, to which reference has already been made. Hegar and Kaltenbach admit that cysts may develop by lymphangiectasis, and Graefe considers that the cysts described by Klob and by Hunt were of this nature. Schulte quotes a case of his own that he believes arose from a dilated lymph-vessel under the influence of persistent inflammatory irritation.

G. Veit first suggested (1867) that certain cysts of the vagina

¹ Plexuses of lymphatic vessels are found in the mucous, submucous, muscular, and external fibrous layers of the vaginal wall; those in the last are the largest and are sacculated (Klein).

might owe their origin to the remains of the embryonal structures known as the Wolffian ducts.

The earliest description given by these ducts was by Malpighi in a letter published in 1681. Their existence was forgotten until 1822, when Gärtner discovered them anew, and since then they have been known as the canals of Gärtner. They have subsequently been studied by Jacobson (1830), Kobelt (1847), Follin (1850), G. Veit (1867), Von Preuschen (1877), Beigel (1878), Freund (1878), Kölliker (1879), Graefe and J. Veit (1882), Kocks (1883), Böhm (1883), Dohrn (1883), Geigel (1883), and by Rieder and others.

Rieder, in an elaborate and exhaustive paper (1884), reviews the work of all the observers so far quoted, and appends the results of a most valuable series of investigations, conducted by himself in the Pathological Institute of Basel.

The fact of the persistence of these ducts in certain animals, notably the cow, sow, cat, fox, sheep, and mare, has been demonstrated beyond question. Their presence in man has been doubted, even denied (Coblenz), and as late as 1881, Watts said he had looked in vain for a detailed description of them. In view of these circumstances, and the fact that the cyst in our own case arose, in all probability, in a dilated duct of Gärtner, we are led, in order to make our studies more intelligent, to refer briefly to the anatomical structure of these embryonal remains.

The sexual organs of 40 female subjects of different ages (from an embryo 13 cm. long to a woman of 67 years) were investigated by Rieder. He reaches the following conclusions.

Remains of Gärtner's ducts are found in the human female in about every third case, and may persist up to a considerable age (67 years). They are present in one of two forms: *a.* an epithelial tube surrounded by muscle (in one-fifth of the cases); *b.* a muscle bundle without epithelium (in one-sixth of the cases).

They are more commonly encountered on the right than on the left side. At first they rest upon the border of the lower segment of the uterine body. Opposite the point of junction of body and cervix, they pierce and imbed themselves in the musculature of the uterus, lying at the side and somewhat in front of the lumen of that organ, which they approach very closely in the lower part of the cervix. They abruptly leave the neighborhood of the cervical canal in their transition to the vagina. In the vagina they lie antero-laterally in its muscular coat, at first pretty near the mucous membrane, but lower down, in the midst of the muscularis, somewhat removed from the mucosa, and yet distant from the urethra. Below the mid-urethral level it is not possible

follow them, nor can one discover any terminal openings. The atrophy and disappearance of this segment of the canals is due to the attenuation during growth of the urethro-vaginal septum.

[Some authors do, however, describe two small indentations, called Skene's tubes, situated near the external orifice of the urethra, and consider them the peripheral extremities of the ducts of Gärtner, although it is admitted that the connection between the canals above and these tubules below may be disturbed. This opinion has been challenged, and, so far as we are aware, the continuity between the two, in man at least, has not been established. Rieder does not discuss this question, but it may be interesting to refer to the work of Kocks quoted by him, and also to the articles of Skene (1880), Coblenz (1881), Schüller (1882), Kleinwächter (1883), Obedieck (1884), Schröder (1886), and Sutton (1886).]

Rieder continues: In shape the canals in the vagina appear as simple crevices or slits in the substance of the wall, with here and there a notch or indentation in them. As they descend, these interruptions become more frequent, the ducts grow narrower, lose their lumen, and show finally, before they disappear, only as epithelial stripes or streaks. The canals are invested internally with a double layer (exceptionally a single layer) of cylindrical cells of medium height and without cilia. The epithelium clings loosely to its connective-tissue environment, from which it is frequently found detached, either in irregular groups of cells or as a connected tube.

Rieder asserts, further, that the epithelium lining the duct is surrounded by a thin connective-tissue stratum—the mucosa of the canal—and this by a muscular envelope, consisting of three layers of smooth muscle fibres, the outer and inner arranged longitudinally, the middle circularly. The muscular coat is highly developed in the portion of the duct traversing the vagina. In the solid muscle bundles above described, the layers may be separated from each other, and are interwoven with connective-tissue fibres.¹

That from these ducts of Gärtner a form of vaginal cyst can develop, as suggested by Veit, is not improbable—indeed it is quite generally admitted—for beside Rieder, whom we have

¹ In its upper portion the duct of Gärtner corresponds to the vas deferens; in the region of the cervix, with the seminal vesicles; and in its course through the vaginal wall, where its cross section appears crevice formed, to the ejaculatory duct in man. Sutton thinks a diverticulum, seen just before the termination of the duct in the vagina, is the homologue of the seminal vesicles, while Watts says that these ducts correspond with the peritoneal tubes seen in crocodiles and described by Milne Edwards.

For diagrams of microscopical cross sections of Gärtner's ducts see Von Preusche

just quoted, many well-known writers upon this topic. Froment, Graefe, Hegar and Kaltenbach, Höning, Schulte, and others entertain a like opinion.

Duncan, however, maintains, quite authoritatively, that there is not a single case known in which an accumulation of fluid has been proved to be situated in a dilated duct of Gärtner; while Kaltenbach and De Sinety, although admitting that such a theory of origin for vaginal cysts is not illogical, yet with perfect justice, as it seems to us, call attention to the great want of anatomical demonstration.

Some authors (Mundé, De Sinety, Winckel) assert that, since cysts are situated so rarely upon the side wall or in the lateral portion of the vagina, Veit's theory can hardly be considered of any great value. Von Preuschen comes to the same conclusion because, as he believes, cysts are seated most often upon the posterior or lateral walls of this conduit. Of course no one undertakes to say that this idea of Veit's is applicable in determining the origin of all vaginal cysts, but still such arguments as those we have just rehearsed are apt to lead one astray. A great deal of confusion may be avoided, and one's ideas be made much clearer, by remembering that, although the anterior and posterior walls are affected by this species of cystic disease with an almost equal degree of frequency, and much oftener than the lateral walls, yet it is rare to find a cyst occupying any one of these positions to the exclusion of all others. As has been already mentioned, cysts of one wall, particularly if large, overlap and encroach upon another.

Further, we must remember that the canals of Gärtner lie antero-laterally in the vagina, towards its side, yet in the substance of the anterior wall.

In regard to the mechanism of the development of cysts of the vagina from the ducts of Gärtner, Von Preuschen emphasizes the importance of the plugs of epithelial debris which are sometimes found almost filling up the lumen of the duct, and also the variations in the calibre of the tube, the deviations at its point of exit, or even the complete want of any terminal opening. All of these conditions favor obstruction and dilatation.

As has been said before, there is but little anatomical proof in support of Veit's theory. Yet Sutton describes and pictures two cysts the size of hen's eggs in the vagina of a cow, which

clearly owed their origin to a dilatation of a Gartner's canal, and he observes that smaller enlargements of this kind are of frequent occurrence. Besides, interesting cases of cysts of the vagina in women are recorded at length by Rieder, Warren, and Watts (the specimen in the last having been examined and described by Garrigues), in which a like mode of development is, we believe, proven beyond question.

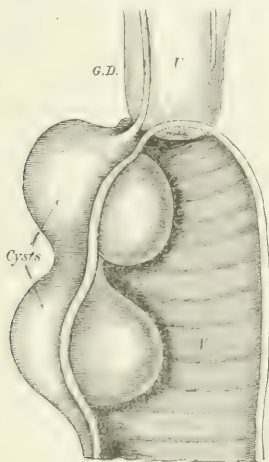


FIG. 1. (After Sutton.)

The present seems to us the most fitting opportunity for the introduction of the history of our own case.

On the 19th of April, 1886, Mary M., æt. 30; married; a slender, delicate mulatto woman, presented herself at the Woman's Clinic of the Central Dispensary with the following history :

Menstruation began in her 14th year, occurs every thirty days, and lasts three days. The quantity is profuse, and there is pain during the flow, of a cramp-like character, in abdomen, back, and hips.

In the intermenstrual period there is profuse leucorrhœa, pain in the back and left inguinal region.

Dyspareunia.

An abortion, probably at the third or fourth month, occurred eight years ago, accompanied by severe hemorrhage.

One child at term, two years and four months ago ; labor was difficult and tedious, but terminated without artificial assistance ; convalescence was rapid and the patient nursed her child.

Bowels always regular. Difficult urination, with retention at intervals, for the last two months.

The patient came to be treated for leucorrhœa and pain. She was very ignorant, and it was only after repeated questioning that it could be established with any degree of certainty that she had always been well before, but never since the birth of her child. She had never noticed any tumor about the genitalia.

Present Condition.—Laceration of the perineum ; slight cystocele and rectocele ; laceration of the cervix ; subinvolution and slight prolapsus of the uterus. The vaginal walls were inflamed and covered with a muco-purulent secretion.

There were four considerable elevations above the vaginal surface, lying one below the other in a straight line, on the right half of the anterior wall, which, for convenience of description, have been numbered from above downward 1, 2, 3, 4. The uppermost is situated just below the level of the cervico-vaginal junction ; the lowest immediately behind the meatus urinarius.

They all presented as regular hemispherical projections, sharply bounded and separated from each other by a slight interspace, except the lowermost, the long diameter of which was parallel with the long axis of the body, and its shape not unlike that of a lima bean. They rapidly decreased in size from above downward ; the uppermost tumor, No. 1, being about the size of a large plum, while the last, No. 4, was hardly as large as a lima bean. The whole arrangement looked not unlike a string of four beads of different sizes.

The surface of the two intermediate tumors was bluish-white in color, smooth and glossy ; that of the others appeared covered by the normally wrinkled but inflamed and thickened vaginal mucous membrane.

They were all tense and elastic, Nos. 1 and 4 offering more resistance to pressure than did the other two, while in no case was there sensitiveness or pain.

Constant pressure produced no change in the shape or position of the tumors, and exploration of the urethra and bladder with a sound, showed no connection with them.

A diagnosis of multiple cysts of the anterior vaginal wall was made. A portion of the fluid on this or a subsequent occasion was removed from each of the cysts by a hypodermic syringe, and examined chemically and microscopically.

The contents of cysts Nos. 2 and 3 exhibited the same characteristics—a clear, straw-colored, slightly tenacious fluid of a neutral reaction, and containing about one-tenth its bulk of albumin. On microscopical examination were found a few red blood-corpuscles ; large round granular cells, like the so-called ovarian corpuscles, and affected in a like manner by acetic acid ; and

finally, squamous epithelial cells in abundance, but smaller than the superficial vaginal epithelial cells from the same case.

Cyst 4 contained a colorless, jelly-like, colloid mass, which did not escape on puncture, but was expressed from the cyst. It presented a microscopical picture identical with that of cysts 2 and 3.

The fluid removed from cyst No. 1, the topmost, was, however, markedly different from the other three specimens. It was of a dark, reddish-brown color, turbid and viscid, of a strongly acid reaction, and contained one-fifth its bulk of albumin. On standing, there appeared a clear yellowish stratum above, and a dark-brownish one below.

There were found an abundance of red blood-corpuscles and large round granular cells; also a few leucocytes and squamous epithelial cells. There was much granular débris.

In no case had the fluid any odor, nor were oil globules nor cholesterin crystals observed.

It was with some difficulty that the hypodermic needle could be made to enter cysts 1 and 4, the wall in each instance being tough and unyielding, but cysts 2 and 3 were easily pierced.

Cyst No. 4, the smallest, did not refill after puncture, while in cyst No. 3 there was a return of fluid, and in twenty days it was as large and tense as before. The contents, again withdrawn, showed no change in chemical or microscopical constitution.

Cyst No. 2 completely refilled in ten days. The sac was a second time evacuated through a hypodermic needle. The yellowish-brown purulent looking liquid had a marked acid reaction and a slight disagreeable odor. It contained pus-corpuscles in large numbers, oil globules, granular squamous epithelial cells, and the large round granular cells previously noted.

In thirty-eight days from the time that cyst No. 1 was emptied, it had regained its former size; its contents, again examined, showed characteristics identical with those previously observed.

To summarize, therefore: cyst No. 4 disappeared after the first tapping, while there was re-accumulation of fluid in cysts 1, 2, and 3.

Immediately after the second puncture in each of the three latter instances, an operation was performed for the cure of the affection, the hypodermic syringe having been used simply to withdraw, for purposes of investigation, as large a portion of the contents of the cysts as possible. It is not at all surprising that simple puncture did not produce a radical result; the return of fluid occurred, however, much more rapidly than one would have expected. It is probable that in no case was the cyst completely emptied, and that the mechanical irritation incident to puncture, even with a very delicate needle, was enough to hasten the reproduction of liquid in all cases, and the occurrence of inflammation in one.

The entire length of the anterior wall of cyst No. 3 was incised in the direction of the long axis of the body. Without further

treatment, the depression, lined by a smooth and silvery membrane, soon became indistinguishable among the wrinkles of the vaginal superficies.

The surface of cyst No. 2 was cleansed and dried, and pencilled with a four-per-cent solution of cocaine. It was then incised as in the previous instance, an elliptical piece removed with scissors from its anterior wall; its cavity, lined with a pyo-

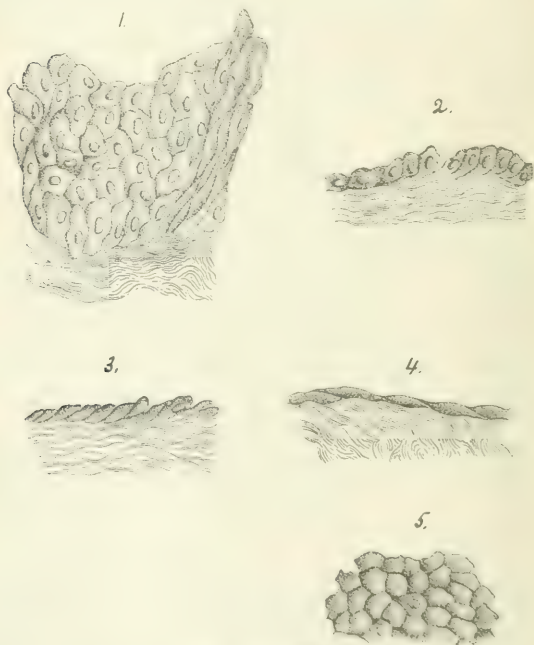


FIG. 5. (After Lebedeff.)

genic membrane, was washed out with an antiseptic solution, and packed with iodoform gauze. This dressing was repeated many times. The cyst slowly granulated up from the bottom, and there was ultimately left of it nothing but a small depressed cicatrix in the anterior vaginal wall.

Cyst No. 1, the largest, was subjected to the same plan of treatment. As was feared, on account of the small size of the elliptical piece removed from the anterior wall of the sac, it

showed a tendency to close. Therefore, nearly all that portion of the cyst-wall projecting above the vaginal level was removed with scissors, after the parts had been thoroughly anesthetized with a twenty-per-cent cocaine solution, and the membrane lining the cyst cavity was stitched to the vaginal mucous membrane by ten catgut sutures. The unremoved portion of the sac was thus turned into the vagina, which was packed lightly with iodoform gauze. The edges united without suppuration, and in a very short time a small, shallow depression alone marked the former seat of the cyst.

A microscopic examination was made of the elliptical piece removed from the wall of cyst No. 3. It was found to be composed of connective tissue and unstriped muscular fibre. The internal investment consisted largely of a single layer of columnar epithelial cells without cilia. The cells were arranged, in part, at a right angle, in part in a direction oblique to the subjacent tissue. In places, this obliquity was accentuated, and the cells presented the appearance of slightly overlapping pavement cells, viewed in profile. Occasionally, a distinctly marked, many-layered pavement-cell stratum was to be seen. In other words, there could be noted here the same transitional phenomena which have already been alluded to, and which Lebedeff has so lengthily described, in illustrating the changes wrought by the pressure of the contents upon the lining epithelium of vaginal cysts. Indeed, it would be impossible to represent more accurately than do Lebedeff's diagrams the appearance of the sections made in our own case by the microscopist of the Army Medical Museum, Dr. W. M. Gray.

We believe that the cysts in this, our own case, originated in a dilatation of the vaginal portion of the right Gärtner's canal.

It has been intimated by Freund that vaginal cysts might be due to an accumulation of fluid in a duct of Müller which, during development, had failed to unite with its fellow of the opposite side; and Graefe considers this theory not improbable, since the remains of embryonal double formations of the genital canal are encountered with a relative degree of frequency.

Duncan, Fritsch, Hart and Barbour, Hegar and Kaltenbach, Mundé, and Veit speak rather favorably of the idea, while Winckel considers that there is only one other mode of origin possible for cysts which are deep-seated and provided with muscular walls. Breisky thinks that Winckel's case of congenital cyst was of this nature.

The walls of such tumors would be of a structure similar to that of the vagina itself; the inner epithelium remaining cylin-

dricial in type, or showing an alteration to the pavement variety.

Graefe considers that the cysts in his third case were due to a manifold constriction of a non-united Müller's duct : and in his ninth case, that two cysts developed in Gärtner's and one in Müller's duct—a combination strange, he thinks, but not impossible.

The theory, especially advocated by Froment, that a cyst of the vagina is simply the result of an accumulation of fluid in a depression formed by the union of the crests of two contiguous folds of the vaginal mucous membrane, is questioned by Klebs and Kolaczek.

Froment's ideas may be summarized as follows : Depressions exist between the ridges into which the mucosa of the vagina is thrown ; these are particularly marked in women who have not had sexual intercourse, and have never borne children. Two neighboring folds, under the influence of some irritative or inflammatory stimulus, adhere to a certain degree by their free borders, and thus a little cavity is formed between them. In this cavity, lined by the usual vaginal epithelium, there accumulate little by little the products of secretion, abnormally increased, perhaps, by the inflammation which produced the sac, until a retention cyst is formed which ultimately develops into a tumor of appreciable size.

It is true that in some cases a cyst is found with an epithelial investment that would seem to make this mode of origin possible, yet we are not inclined, without further anatomical proof, to attach any great importance to this theory so ably advocated by Froment.¹

¹ Cf. Collardot, Englisch, Von Preuschen, Winckel, and especially Eppinger in the discussion of emphysema of the vagina.

REMARKS ON THE TECHNIQUE OF VAGINAL HYSTERECTOMY.

BY

A. MARTIN, M.D.,

Berlin.

VAGINAL hysterectomy, whether done for cancer or any other reason, is not so familiar to the American gynecologist as it is to his German confrère. It is an operation done in the depth of the vagina, and naturally much more difficult than any other one performed on the outside of the genital organs. The possibility of removing the uterus from the floor of the pelvis has been established by experiment, and the feasibility of performing the operation on the living has been so often demonstrated, and with such favorable results, that there can be no doubt that this operation belongs to the legitimate procedures in gynecology. When I said, in my paper read before the Washington Congress, that vaginal hysterectomy has proved to be an operation possibly allowed to every gynecologist, and not only to the experienced, high-standing leaders in the profession, I meant to add that this remark was not intended to include every general practitioner and amateur gynecologist. It requires a certain amount of experience to manipulate in the depth of the vagina, some knowledge of the anatomy of the parts, and surgical dexterity. In Germany, we are accustomed to apply the title of gynecologist to those who have passed a clinical school, attached as assistant to a university or similar institution, and the number of self-made and self-taught men is decreasing in accordance with the development of this branch of medicine.

Even when only legitimate gynecologists begin to undertake vaginal hysterectomy, they cannot neglect the acquisition of individual experience, and often must pay dearly for their skill. In order to facilitate matters to those who still lack the necessary experience, I wish to make the following remarks.

It is of no special importance on which side of the uterus the detachment of the cervix from the fornix vaginae is begun. We can open the floor of the pelvis from the sides, in front or

behind, and can safely reach the peritoneum and detach the cervix. At all events, the operation should be undertaken only when the uterus is freely movable so as to allow stretching of the field of denudation. I myself prefer to open the posterior fornix, because at this point we generally reach the peritoneum at an earlier time, and I feel very easy as soon as I can introduce my finger into the peritoneal cavity and control by this means all further steps. I unite the vagina to the peritoneum by sutures introduced at some distance from the edge of the wound surface, thus controlling the bleeding as well as the gaping of the lymph spaces of the pelvis. Through this opening I perform the preliminary ligation of the pelvic floor on both sides, as may be seen in my book on the "Pathology and Therapeutics of the Diseases of Women," 1887.

The detachment of the lateral fornix must reach the side of the body of the uterus; the cervix must be thoroughly freed. I generally finish one side before I proceed with the other.

When the cervix has been freed from behind and both sides in this manner, I enter on the detachment of the bladder. This step has been judged very differently by various surgeons. Even after having done the operation two hundred times, I never feel quite free from embarrassment at this point of the procedure. I join the edges of the lateral wound by a horizontal incision which follows the line of detachment of the anterior fornix to the cervix. The vagina is cut through at this place; the detachment of the bladder is effected with the fingers. The extent of the connection between bladder and cervix varies remarkably. Sometimes we see the peritoneum of the anterior cul-de-sac coming down to it within half an inch; in other instances it reaches only up to half the height of the body of the uterus. This fact shows that a great amount of care is required in the detachment of the bladder. In proceeding as shown, I have not injured this viscus except in two cases during the summer of 1887. In these cases the neoplasm had infected the posterior wall of the bladder, and in endeavoring to remove all the diseased tissue I removed also a part of this wall. Other operators report having cut into the bladder or opened the ureters. I have observed only one instance of accidental needle puncture, and the patient in this case never suffered any inconvenience. In the two cases mentioned

above, the bladder had a free opening. This opening, lying between the organ and the place formerly occupied by the cervix, could not be called a vesico-vaginal or vesico-uterine fistula; it formed a kind of vesico-peritoneal communication. In my first instance of this kind, the uterus had been enlarged to the size at the fourth month of pregnancy, and the connection between bladder and uterus was quite extensive. The opening into the bladder, nevertheless, was reduced, even during the operation, by the natural contraction of the parts, which is remarkable in every case as soon as the uterus is removed. As the operation had been difficult, I did not wish to prolong it by the suture of the bladder, and therefore introduced a drainage tube, as I usually do, insuring the free escape of the urine, and had the patient brought to bed. The recovery was the most astonishing point: the patient, who was very anemic from profuse hemorrhages and sufferings, recovered, although she continued vomiting for eight days. The urine never troubled her. I removed the drainage tube on the twenty-first day, when the patient was out of bed. Some time before this, she reported that she could retain some urine for half an hour. A week later, she retained urine for nearly two hours, and lost control over the bladder only in the case of certain motions and positions. The patient left my house eight weeks after the operation, having extraordinary control over the bladder, and declined to have any further local treatment, although there was still a small opening in the cicatrix of the fornix, through which, by pressing, a small amount of urine escaped. The operation was done towards the end of June, 1887, and I hope that the definite closure of the bladder will be effected by cicatricial contraction.

The other case was operated on during the first days of August of the present year. The opening into the bladder had the same position as in the preceding case; but as the patient was not so weak and anemic, I at once united the edges of the bladder and the border of the peritoneum to the vaginal fornix. This was healed when the patient left my house, three weeks after the operation; although the patient complained still of some discomfort in the bladder, which could retain only a small amount of urine, some tenesmus being felt whenever a larger quantity accumulated. The ureters I never saw in my operations; they enter the bladder so close to the pubic arch

and far from the cervix that they can hardly be injured when we free the cervix at its attachment to the pelvic floor.

The final removal of the uterus is performed by some operators after the fundus uteri has been everted: by others, without eversion. If the uterus is not very large and can be brought out easily, I do not evert it. If it is large, I evert it through the posterior opening; others prefer the anterior opening. This step of the operation sometimes causes great difficulty, and I have devised an instrument for everting the uterus from within; for a long time past I have ceased using this instrument and succeed in everting the organ with Muzeux's or the bullet forceps, which latter I chiefly rely on. I push the cervix forward and upward, expand the posterior hollow of the fornix with a plain, flat hook, and catch the posterior surface of the body; this is brought down, and as fast as the posterior surface comes into view, other forceps are inserted until the fundus passes the hollow.

Then the Fallopian tubes and upper parts of the broad ligaments come into view. It is very important, if possible, to remove the whole tubes with the ovaries. In order to accomplish this, the everted uterus must be pushed aside; with the finger I catch the ovary and the tube, thus stretching the lateral part of the broad ligament, and into this the ligatures are inserted. I try to attach with these same ligatures the rest of the ligament to the vaginal fornix. When the ligament is thoroughly transfixed, I detach the uterus, tube, and ovary of that side; the same is done on the other side.

If there is any bleeding, I catch the arteries in question with the forceps and ligate them; or I ligate the whole surrounding tissue. I always try to attach these bleeding surfaces to the edge of the vagina. Frequently I am asked if the intestines do not prolapse during the operation. This happens but very rarely, and if it does occur, I introduce a sponge on a holder, thus retaining the intestines in Douglas' pouch. Perhaps the reason why intestinal prolapse happens to me so seldom is that I exert no pressure from above.

The opening in the floor of the pelvis is diminished at once, so that, when the edges of the wound are tied, it is frequently difficult to find it. Should the opening remain large—an unusual occurrence—it can be reduced in size by uniting the edges of the vagina.

Some operators close this wound at once. I cannot make up my mind to do so, since I continue using the drainage tube in these cases. I apply a smooth india-rubber tube, the end of which must lie in Douglas' pouch. This tube is retained by the contraction of the edges of the opening, and I have never seen any discomfort arising from its presence. There is always some oozing of bloody secretion during the first days, and only when this is diminishing I remove the tube, generally about the seventh or eighth day after the operation. To guard against infection of the peritoneum, the outer end of the tube is surrounded with salicylated cotton. As regards after-treatment, it must be entirely expectant. If the patients cannot pass urine freely and spontaneously, it is drawn by catheter as long as necessary; generally the patients pass water from the first day without discomfort.

I avoid vaginal injections unless there are decomposed discharges. The washing out of the peritoneum seems of doubtful effect; I have not done it for a long time.

The bowels are moved on the fourth or fifth day. The patients are allowed to get up between the tenth and twelfth days. I generally do not inspect the cicatrix before the fourteenth day.

I have never seen an opening into the peritoneum; it had always closed. I begin to remove the sutures about the fourteenth day, at intervals of two or three days.

The cicatrix forms a short, tense line, towards which the ornx of the vagina contracts concentrically.

The general nourishment is arranged according to the course of the convalescence; as soon as the patients are out of bed and feel stronger, it must be remembered that they are entering on the climacteric period, and that congestions and similar troubles are to be expected. I therefore order early exercise, fresh air, and appropriate diet. Sexual intercourse should not be allowed before the end of three months.

RECENT HYSTERECTOMIES FOR CANCER.

BY

SARAH E. POST, M.D.,

New York.

DURING the past two years over three hundred additional cases of vaginal hysterectomy have been reported, as follows:

	Method.	Cases.	Died.	Recov.
Battlehner, Arch. f. Gyn., 1885, p. 325.....		9	1	8
Boeckel, Gaz. des Hôp., 1886, p. 990.....		2	0	2
Brennecke, Ztsch. f. Geb. u. Gyn., 1886, p. Brennecke's 56; Martin, Report Internat. Med. open wound, Congress, Washington, 1887.		21	0	21
Bouilly, by Hache, Rev. des Sc. Méd., April, 1887, p. 721.		11	3	8
Buffet, Gaz. des Hôp., 1886, p. 647.....		1	0	1
Le Dentu, Bull. et Mem. Soc. de Chir. de Paris, 1885, lxi., p. 738.		1	1	0
Dobrowsky, St. Petersburg Med. Woch- Fritsch's. schr., Aug. 31, 1885.		2	0	2
Duploy, by Baudet, Gaz. des Hôp., Oct. 23, 1886, p. 989.		1	1	0
Fehling, Arch. f. Gyn., 1885, p. 325.....	Fritsch's.	3	0	3
Fischel, Prag. Med. Wochschr., 1886, Nos. Brennecke's 3, 4 and 6.		1	0	1
Frank, Arch. f. Gyn., 1887, xxx., p. 1....		5	0	5
Fritsch, Arch. f. Gyn., Jan., 1887.....	Fritsch's.	36	5	31
Gardner, Phil. Med. News, Nov. 13, 1886..	Schroeder's.	1	0	1
Gillette, Bull. et Mem. Soc. de Chir. de Paris, 1885, p. 58.		1	0	1
Gottschalk, by Soudou, Ztsch. f. Geb. u. Brennecke's Gyn.		1	0	1
Kappeler, by Brunner, C. f. G., 1886, p. 789.		1	0	1
Klotz, C. f. G., 1886, p. 31.....		17	0	17
Leopold, C. f. G., 1886, p. 30; Arch. f. Gyn., 1887, xxx., p. 401.		42	3	39
Linkenheld and others, by Fischel, Prag. Med. Wochschr., 1885, p. 325.		5	0	5
Martin and Duvelius, Berl. Klin. Woch- Martin's schr., Jan. 31, 1887.		38	7	31
Müller, C. f. G., 1886, p. 37.....		1	0	1
Mundé, Am. J. Obst., May, 1887; N. Y. Fritsch's. Med. J., July 30, 1887.		3	0	3
Olshausen, by Martin, Report Internat. Congress, Washington, 1887.		15	5	10
Péan, by Hache, l. c.		5	3	2
Pozzi, Abst. d. C. f. G., 1886, p. 408.....		2	1	1
Purcell, Br. Gyn. J., May, 1887.		3	0	3
Rochard, France Méd., April 9, 1887....		1	1	0
Schmidt, Schmidt's Jahrbuch, 1886, p. 161.		9	2	7

	Method.	Cases.	Died.	Recov.
Schroeder and Hofmeier, Ztsch. f. Geb. u. Gyn., 1886, p. 219; Martin, Report Internat. Congress.	Schroeder's.	40	3	37
Schultz, Med. Press and Circ., 1886, xli. p. 190.		9	2	7
Staupe, by Martin, Report Internat. Con..		6	1	5
Tedenat, Gaz. des Hôp., 1886, p. 990.		2	0	2
Terrier and Richelot, by Doléris, Nouvelles Arch. d'Obst. et de Gyn., Jan. 25, 1887.		11	1	10
Thelen, C. f. G., 1886, p. 585.		5	0	5
Trelat, by Hache, l. c.		3	1	2
Zoiadsky, Ed. Br. M. J., March 13, 1886.	Schroeder's.	16	7	9
Additional American operations collected by Dr. A. Palmer Dudley, N. Y. Med. J., July 9, 1887.		51	29	22
Total reported during the year.....		381	77	304
Reported previously, Abstract Am. J. Obst., 1886, p. 1214.		341	93	248
Total.....		722	170	552
Total mortality 24 per cent.				

In the words of another, vaginal hysterectomy presents three indications: the isolation of the uterus, the management of the broad ligaments, and the treatment of the wound. During its first years this operation was hampered by the directions given for the abdominal method. The broad ligaments were tied religiously in three portions, and exact union of the peritoneum with or without a drain was, in all cases, attempted. Schroeder first dropped this tedious manœuvre, but practically accomplished the same result by uniting all the divided tissues in his union of the vaginal wound. As early as 1880, however, a change in the attitude of operators became apparent upon this question, and here Billroth's name leads. In 1880 Billroth did five operations, leaving the wound fully open. Olshausen followed with his thirty-two operations during the next three years. Exact peritoneal union rapidly fell into disuse, and, as early as 1883, Fritz Brunner, in his inaugural dissertation (*C. f. G.*, 1886, p. 789), was able to show statistically its adverse influence compared with that of the new method.

The open wound treatment was modified first by Martin, who united the peritoneum with the vaginal wall, thus covering and sealing the cellular tissue pertaining to the wound. Schatz added the omission of the drain, and Fritsch completed

the technique of the operation most approved to-day by his permanent tampon of iodoformized gauze.

In January of the present year, Fritsch (*Arch. f. Gyn.*, Jan., 1887) was able to report a total of sixty operations with but seven deaths, and during the same month Martin (*Berl. Klin. Wochens.*, Jan. 25th, 1887) reported sixty-six complete operations with but six deaths. Martin's total of ninety-four operations included twenty-eight cases in which the whole of the diseased area could not be removed—cases which other surgeons as a rule refuse. It is here difficult to decide which deserves the most admiration—the skill which has sixty-six times removed the cancerous uterus with a mortality of but nine per cent, or the humanity which risks damaging statistics in order to attempt relief in this hopeless disease. It should be added, however, that Martin now formally abandons the effort to benefit cases in which the disease has extended beyond the uterus, by this operation.

Of the total of seven hundred and twenty-two operations, seventy-six reported as done by Schroeder's method had a mortality of twenty-seven per cent, ninety-five by Martin's method had a mortality of twenty per cent, while of eighty-one done according to Fritsch's method but ten died, a mortality of but twelve and one-half per cent.

Notwithstanding the brilliancy of Fritsch's and Martin's results, the difficulty of their technique, perhaps, has deterred the general surgeon in favor of the open wound treatment of Billroth. For whatever the reason, over one-half of the operations reported during the past year have been completed without sutures in either the peritoneal or vaginal wounds. Brennecke is at present the most brilliant exponent of this method, having twenty-one cases without a death. This operator has introduced a new feature in everting the stumps of the broad ligaments so as to bring their peritoneal surfaces into apposition. The whole of the wound is thus in the vagina, and a natural drainage is obtained. The drainage tube has been commonly discarded in recent cases, and Brennecke adds glycerin to his tampon of iodoformized gauze, crediting the depleting effect of the glycerin with an agency in his success.

Mention might be made of the use of Péan's forceps by several French surgeons, headed by Richelot. These forceps are used to secure the broad ligaments and are left in the

wound for from twenty-four to twenty-eight hours. The diminution of the mortality rate in this operation in Paris has been ascribed to their use. In a fatal case, however, that of Duploy, the wall of the rectum sloughed where they rested upon it. The object of their use is, in the words of a French surgeon, to secure against hemorrhage and to shorten "the peritoneal act" of the operation.

The shortening of the whole time consumed in the operation is by several considered an important condition. One writer adds that a half-hour should be sufficient instead of the hour and a half usually required.

It is a pleasure to record the progress made in our own land by this operation. According to Dr. Dudley, its mortality is steadily diminishing. Dr. Lane, of San Francisco, has now done 9 hysterectomies with but 3 deaths; Dr. Bernays, of St. Louis, 6 without a death; Dr. Polk, of this city, 6 with 2 deaths; Dr. Mundé, 6 with 2 deaths; Dr. Bull, 5 with 1 death; and Dr. von Hoffman, 4 without a death. Bernays omits sutures, somewhat after Brennecke's method.

In regard to the question of recurrence, both Martin and Fritsch have tabulated gratifying results. Of thirty-four in Martin's list who survived operation previous to January 1st, 1885, twenty-four were still well at the end of two years, while of Fritsch's twenty-two who survived operation previous to 1885, twelve remained well at the end of two years. Contrary to the earlier opinion, Fritsch states that uterine cancer recurs less frequently after extirpation than cancer in other parts.

For the purpose of comparison we copy the results recently tabulated by Poucher (*Albany Med. Annals*, 1886, p. 272) with regard to cancer of the breast.

		Died, %	Remained well %.
Billroth's clinic,	143 cases.....	28.77	5.57
Esmarch's	" 225 "	10.22	11.55
Fischer's	" 147 "	20.04	8.84
Volkmann's	" 131 "	07.39	16.19
Kuester's	" 132 "	14.39	Of 81, 16

remained well at the end of two years.

In regard to the indications: Martin and Fritsch both prefer total extirpation to high amputation, even where the vaginal

portion only of the cervix is affected. The prognosis is better, the operation is less difficult, and there is less loss of blood. Mobility of the uterus is the most important condition. Increased size in the uterus does not preclude success.

THE OPERATION OF PRIMARY LAPAROTOMY IN CASES OF
EXTRAUTERINE PREGNANCY, WITH A TABULAR RECORD,
SHOWING THE RESULTS IN TWENTY-SEVEN WOMEN,
UNDER TWENTY-SIX OPERATORS.

BY

ROBERT P. HARRIS, A.M., M.D.,

Philadelphia.

THE proper management of a case of ectopic gestation will depend very much upon the stage of development to which the fetus has advanced when the patient first comes under the observation of a physician, or when he first recognizes the true character of the pregnancy. In a large proportion of cases, nothing abnormal is suspected by the woman, and no medical attendant is consulted, until, after an attack of pain and faintness, it is discovered that she is bleeding internally, and in danger of death, from the sudden bursting of a Fallopian fetal cyst, the proper treatment for which is immediate laparotomy, with ligation and exsection of the cyst, followed by a careful washing out of the abdominal cavity. This is not a *primary* operation, which belongs to a much older classification, but a new and distinct method of management, first carried into a successful issue under Mr. Lawson Tait, and which, for the sake of distinction, may be called the early hemostatic laparotomy for Fallopian pregnancy. But the Fallopian fetal cyst does not necessarily burst in a direction to discharge its contents into the abdominal cavity, as it may give way at the bottom, and the fetus continue its development between the laminae of the broad ligament outside of the peritoneal cavity, and ultimately present in the back of the vagina, to be delivered, at or near maturity, by *elytrotomy*, which has been very erroneously called the "vaginal Cesarean operation." In exceptional cases, the Fal-

lopian cyst will give way at a part so thin that the small vessels torn across bleed comparatively little; the escaped fetus does not die, and the woman, after perhaps an attack of peritonitis or exhaustion, recovers, while the fetus grows nearly or quite to full maturity in her abdominal cavity. Again, the Fallopian cyst may continue in its integrity, and the fetus develop within it for three, four, or more months, giving rise to sensations leading the woman to seek medical advice, and it may be to the discovery of the cause of uneasiness, under a careful vaginal examination, aided by abdominal pressure and palpation with the other hand. Such a fetus may die from some unknown cause, its presence be detected, and its removal effected by abdominal section, ligation, and exsection. But so fortunate a result as this is rarely to be met with, and the death of the fetus must be secured, to prevent it becoming a source of fearful danger to the mother, by means of some feticidal method, not likely to destroy both. This result has been repeatedly attained, particularly in the United States, by means of faradization, no puncturing needles, which are apt to convert a safe into a fatal operation, being resorted to. There may be some doubt as to the positiveness of the diagnosis in all cases; but it is safer to pass in error a galvanic current through a tumor than to allow a growth, which may prove to be fatal, to continue its dangerous development.

In many cases, however, an extrauterine pregnancy escapes detection until too late to employ a feticidal method with any ulterior advantage to the patient. In fact, the woman may have already gone nearly or quite to her full period of cysto-gestation, and be suffering with the pains of a *pseudo-labor*, which has often been mistaken for the normal process. The discovery of the true condition of the woman is at last positively determined, and the fetus is ascertained to be alive. In the whole range of obstetric surgery, there is no form of case which has a greater degree of interest, or presents a more puzzling question as to what it is proper to do on the part of the operator. To save both mother and fetus, as by the Cesarean operation, is very naturally his desire; but the history of the past in *primary* laparotomy, as the section which is designed to save the life of the mother and that of her viable fetus is called, shows that he only has one chance in nine of preserving the life of the former; and one out of two of saving the latter. Two points,

then, present themselves to him for consideration. He finds that there is much danger to be apprehended, that the *pseudo-labor* may produce a rupture of the gestative sac, and the death of both child and mother; and he also learns that, when the woman has passed through this period of danger, and her child is dead, a longer delay of ten weeks, on the average, will enable him to perform *secondary* laparotomy, as it is called after fetal death, with a prospect of saving the woman of perhaps seventy per cent or more. The two operations are precisely the same in their method of performance, but differ vastly in their prospective results. This difference is not effected at once by the death of the fetus, as may readily be ascertained by an examination of the cases where secondary laparotomy has been performed only a few days or a week or two after fetal death, in which event the mortality of the primary and secondary operations is equal.

A great step in the advance was made both for the primary and secondary laparotomies, but especially the latter, when Mr. William Turnbull, of London, in 1791,¹ and Dr. James Mease, of Philadelphia, in 1795,² discovered the vital importance, the former by an autopsy, and the latter from the result of an operation under Dr. Charles McKnight, of New York, of leaving the fetal cyst and placenta to be separated and discharged spontaneously. Prof. Koeberle, of Strassburg, is under the impression that this recommendation originated with him, many years later;³ but he has evidently not seen the papers of Turnbull and Mease, written long before he was born. The world of surgery was a long time in adopting their suggestions, and even now an operator may occasionally be found who is unwise enough to tear away the placenta after a puerperal elyotomy or a secondary laparotomy, and learns by a sad experience that this is not a proper way to operate.

Elements of Danger in Primary Laparotomy.—1. The condition of the placenta, which is still functionally active up to the moment of separating the fetus from it. 2. The abnormal characteristics of the placenta itself. 3. The special and ectopic position of the placenta in each individual case. 4. The vas-

¹ "Memoirs," Med. Soc. London, vol. iii., 1792, p. 176.

² "Memoirs," Med. Soc. London, vol. v., 1795, p. 342-347.

³ Letter recently received. Koeberle's operation was on March 10th, 1869; fetus dead 4½ months.

cularity of the cyst-wall. And 5. The non-contractile basis upon which the placenta is located.

During the life of the fetus, and for a varying period after its death, the vascular character of the placenta, and its relations to the maternal blood supply, render the prospective separation of this organ one of the most serious moment. After fetal death, the placental functions cease, the vessels of the cord gradually close, as do also those directly concerned in the oxygenating process of the child's blood; the placenta, if so located as to be well developed, undergoes a process of carnification, becoming more solid and tough, and much less vascular; and the vessels which enter it from the mother are only of a number and caliber sufficient to keep its tissues from decomposition. If, after this condition is completed, the fetus be removed by (secondary) laparotomy, it will readily be seen that exfoliation may slowly take place, without opening any important blood-vessel, or necessarily favoring the absorption of septic matters formed under the process. It will also be as easily understood that when the converse of all this is the case, and the placenta begins to separate after a primary operation, its very first step in exfoliation may open a large sinus or important supplying vessel, and lead to very serious or fatal hemorrhage. Even where the process of decomposition and separation is a gradual one, and no sudden, severe hemorrhage results, the amount of grumous, offensive discharge is very exhausting to the patient, and there is imminent danger of septic peritonitis or septicemia. If the woman should be so fortunate as to escape death, it will be after a long, tedious, and exhausting illness, as shown by the original record of the Jessop case (No. 9 of my tabular statement). If, by any new device of surgery, this exfoliation of the placenta could be prevented, we should then have this organ undergo the changes that take place where the fetus is carried many years, and perhaps lead to its entire absorption from the absence of the fetus. In Case III., where the placenta was very favorably located (in the iliac fossa), the trial was made of leaving this body intact, and closing the wound; but exfoliation began on the sixth day; a fetid matter was discharged, there was an arterial hemorrhage, and the woman died, on the twentieth day, of septic peritonitis. This experiment, under similar advantages of placental location, after proper asepsis, is worthy of a repetition at the present day. The funis should be tied

close to the placenta, the cord cut short, the cyst washed out and closed with seroso-serous sutures after the process of Lembert, and the abdominal wound sutured, without drainage.

In an extrauterine pregnancy, the form and character of the placenta are never truly normal, except in the very rare instance where it alone is within the uterine cavity, while the cyst containing the fetus is external to it, and within the abdominal cavity. Such a protrusion may take place through an old weak uterine cicatrix, the result of a Cesarean operation; or the pregnancy may be of the form given by Moreau, as the "utero-tubo-abdominal," the title explaining the condition. An ectopic placenta varies in character, size, and form, according to its peculiar location, and the vascularity of the parts over which it may be implanted. In some rare instances, as in the Turnbull case already quoted, the report of which is illustrated by three large engravings, no true placental tissue is found, the cyst at one point being very vascular where the cord-vessels are given off. The placenta may be small and thin, or very broad and thin; it may be divided into several portions; it may be unusually large and heavy, as once was observed in a case operated upon by secondary laparotomy, by Prof. T. Gaillard Thomas. It has been found decidedly hypertrophied and having a thickness of three inches, as related by the late Prof. Hugh L. Hodge; but as a general rule, it is smaller and more dense than an intrauterine placenta, and much more strongly attached.

The multiplicity of the positions occupied by the placenta, and the varying character of its vascular connections, make the operation of primary laparotomy, at best, one of very doubtful anticipation. The fact that, in one out of every six or seven cases, the placenta is spread out upon the peritoneal surface of the abdominal wall, and may be directly under the line of incision through the linea alba, adds very materially to the risk of operating; the initial step of which may be a fatal one to the woman, as cutting into this body is here infinitely more dangerous, and the hemorrhage provoked far more uncontrollable, than in gastro-hysterotomy, where it may be rapidly separated by the hand, and the uterine contraction relied upon to arrest the bleeding. There would appear, from the reports of many operations and autopsies, that there is no section of the abdominal cavity in which the placenta may not be found. Its separation, therefore, must be attended with more or less immediate risk in each

individual case, as exfoliation may begin very soon after the removal of the fetus, or be delayed for several days. Severe hemorrhage may attend the process of separation, or the discharge may be sanious, fetid, and in large quantity, exhausting to the patient and dangerous from its septic character. The placenta has been found in the post-uterine concavity; attached to the outer surface of the uterus and its appendages; overlying as a lid the pelvic superior strait, as in the Jessop case (No. 9); attached to the iliac fossa; spread out over the lower lumbar vertebræ; overlying one or both kidneys; attached to the mesentery and colon; to the stomach and omentum; and buried among the small intestines; besides, as I have already stated, spread out upon the inner surface of the abdominal wall, laterally or centrally.

This variation in character and location of the extrauterine placenta, and the fact that it is attached to a non-contractile base, which cannot, by rapid diminution in size, shut up its large blood-vessels, as in the uterine subsidence after fetal expulsion, constitute the main obstacle to success in primary laparotomy, and make it much less certain in character as a surgical procedure than any other form of abdominal operation. This same variation in placental development, due largely to the special location it may occupy, constitutes another obstacle to success in the operation, designed as it is to save two lives, because of the fact that the fetus is, in a large proportion of cases, inferior in size and strength to one of a corresponding age of gestation developed in utero, and is, consequently, much more difficult to raise, or even to keep alive for a few days. Besides this, ectopic fetuses are apt to have some physical defect which may be of vital importance, as in case 21, where there was a large encephalocele. The defective or slow growth in an abdominal fetus makes it important that, where practicable, it should not be removed under the knife until, by a full maturity of gestative age, it shall be prepared to live on, in extra-abdominal existence. Of fifteen children delivered at full maturity, ten lived; and of twelve that were more or less premature, only three lived. Of the whole twenty-seven children, the fourteen that were lost died in from a few minutes up to fifty hours. The three surviving premature children were of 34 weeks, 34½ weeks, and 8 months, respectively.

Vascularity of the cyst-wall may prove in some exceptional

cases, such as that examined post mortem by Mr. Turnbull, a somewhat serious obstacle to the removal of the fetus, but the use of hemostatic forceps, followed by ligation of the vessels, will overcome the difficulty. Extensive adhesions between the cyst and contiguous viscera may prevent the plan now generally adopted, of stitching the edges of the abdominal and cyst wounds together, as was done by Prof. Eugène Koeberle, of Strasburg, in 1871, and probably originated with him; the non-removal of the placenta certainly did not, as I have already shown. Prof. Koeberle aided to bring a knowledge of the latter to the notice of operators on the continent; and his success with it brought about its revival in Great Britain, where the recommendations of Mr. Turnbull and Dr. Mease had been largely overlooked; his use of the drainage tube has also become general in the operation, as the amount of fluid discharged makes it very essential for abdominal cleansing.

Causes of death under Primary Laparotomy.—These may be given in few words, having been already partially anticipated. A careful examination of the records of the twenty-seven cases presented in the accompanying table shows the following: In eleven cases, the patients were in a critical state at the time of the operation; peritonitis already existing in six women; the sac being ruptured in three. Hemorrhage appears to have been the main cause of death in twelve out of the twenty-four patients lost, but was complicated with peritonitis in three, and septicemia in one. Death was attributed mainly to septicemia in three; to peritonitis in three; to heart clot in one; to "shock" in one; and to "collapse" in one. A careful autopsy in every case would, no doubt, have given more definite causes of death, and discovered heart-clots in more than the one case. In rapid death after operation, hemorrhage no doubt plays an important part; except it may be in cases much broken down before its performance, when shock and exhaustion can prove fatal without marked blood-loss. Where repeated hemorrhages take place, and life is prolonged some days, septic infection would appear to play an important part, acting simply, or in association with peritonitis. All these discouraging conditions in expectancy make the prognosis in laparotomy, where the fetus is living and viable, very unfavorable. Rigid antiseptic after-treatment may possibly somewhat reduce the mortality, as it has in early secondary laparotomy, where the dangers are of the same character, but

of a lower grade: but until some measure is devised, if it be indeed practicable even in special cases, for cutting off the sub-placental circulation, and thus preventing hemorrhage and septic absorption, the operation must continue, as it is now, the approbrium of abdominal surgery. *Case 25* is somewhat in advance of all older operations, and is specially memorable because the operator has saved the only woman operated upon at full term; the steps of the operation are as follows:

After removing the fetus, a female, $17\frac{3}{4}$ inches long, and under 6 lbs. in weight, Prof. Lazarewicz thought to attempt the enucleation of the placenta and cyst, but finding this step impracticable, he proceeded as follows: He separated the sac and drew it up through the wound, with part of the placenta; then passed six metallic sutures across the superior third of the abdominal wound down to the part occupied by the cyst; then with a long uninterrupted suture of catgut, after drawing out as much as practicable of the sac and placenta, he sewed in the parts into the edges of the inferior portion of the abdominal wound. This done, he drew the catgut, so as to purse up the parts and put the blood-vessels under pressure; then passed four more metallic sutures across, through abdomen, sac, and placenta; and finally passed a drainage-tube through the cyst, Douglas' cul-de-sac, and vagina, tying the cord to it with a catgut ligature. A case must be quite exceptional that will admit of the placenta being thus treated.

In May, 1885, an original method of operating in a case three months after fetal death was adopted by Prof. T. Gaillard Thomas. Finding an enormous placenta attached to the ascending, transverse, and descending colon, he cut off its circulation by using the cobbler stitch in the line of the intestinal attachment, and then cut out the inclosed portion, which weighed four pounds; after which, he pursed up what remained into the abdominal wound. The patient recovered. This plan would not answer with the vascular placenta found in cases of primary laparotomy.

Closely resembling an extrauterine pregnancy, and one which it is almost impossible to distinguish from it by any system of touch or palpation, is that which occupies the cavity of a uterus unicornis, and which is only second in danger to a Fallopian pregnancy, because of the fact that the fetal receptacle rarely escapes rupture during advanced gestation. One

exception to this I witnessed two years ago, in a primipara who had been a number of years married without impregnation. From the peculiar form of the lady's abdomen, and the mental and physical distress which accompanied the development of the fetus, and obliged her to spend much of her time in bed, her family physician was of the belief that the gestation was extrauterine, an opinion which was thought correct by an eminent consultant. As the physician in charge was an adept in abdominal surgery and very anxious to relieve the patient's distress, and at the same time save the life of the child, he called upon me to visit the case with him and consider the propriety of a primary laparotomy. This step I opposed, for three reasons: 1, The great mortality under the operation as shown by a collection of cases then in my possession. 2, The possibility that the fetus might prove to have some physical defect of vital moment. And 3, the uncertainty that I felt as to the fetus being extrauterine. The operation was fortunately abandoned; and as pregnancy advanced and particularly when labor commenced in too natural a form to be of a *pseudo* type, I became fully convinced that the fetus would be extruded *per vias naturales*, which in due time occurred. The fetus was a small but well-nourished female, that died in three days from obstruction of the bowels, which an autopsy showed to be due to an imperfect development of the whole duodenum and an imperforate rectum which the knife had failed to relieve. The woman, on careful examination, was shown to have a well-marked uterus unicornis, the pointed distal extremity or pseudo-fundus being carried obliquely to the right. The lady had a severe and tedious convalescence, being several months in recovering from the effects of the pregnancy and labor. Had this patient been operated upon, the ready separation and expulsion of the placenta would have shown the operation to have been a true gastro-hysterotomy. The case of Schreyer, operated upon on September 16th, 1836, and quoted in their respective works by Drs. Keller¹ and Parry² as an extrauterine laparotomy, was doubtless of the same character, as the placenta was detached spontaneously in a few minutes, and came away with its membranes. The woman made a rapid

¹ Keller, "Des Grossesses Extrauterines," Paris, 1872, p. 69. From *Monats. für Geburt.*, xiv., p. 283.

² Parry, "Extrauterine Pregnancy," Philadelphia, 1876, p. 229.

recovery, and the child lived: there were no adhesions to the containing sac, which was doubtless a thin-walled uterus of abnormal character.

Primary laparotomy in extrauterine pregnancy is a very rare and fatal operation—so rare, that only one operator out of twenty-six has had a second case. It is true that Mr. Lawson Tait, of Birmingham, has claimed to be an exception, both as to the number of his cases and the proportion of his cures. But he has given no detailed statement of the six cases which he says recovered, and I do not therefore feel justified in adding them to my record, which is complete, in describing the peculiar features of each individual case.

He has only published the particulars of one operation, but claims to have had seven in a period of five and one-half years; occurring in which period I have found eight to the credit of the rest of the world, with two recoveries. He stated on August 1st, 1884, before the British Medical Association, that he had operated once, losing the woman and saving the child; but on May 10th, 1886, wrote a letter to me, in which he claimed that he had operated seven times and had only lost one woman; three of the extrauterine children being then “alive and growing up.” Between these two dates were twenty-seven months, in which time, therefore, he must have had six operations in order, without a death. This would be certainly a marvellous run of success for this special operation, even for an operator of his ability in other forms of abdominal surgery. To have been called to six cases in a condition to require primary laparotomy within so short a period, is a marvel; but to have saved them all is little short of a miracle.

To measure the extent of Mr. Tait's claim, we have only to compare it with what has been accomplished by other men. Great Britain, without his detailed case, has a record of 5 operations in 23 years, saving 1 woman and 1 child. Germany has had 12 operations, 7 of them within the last 10 years, and all covering 74 years, saving 1 woman and 6 children. And all Europe and the United States, 26 operations under 25 operators, saving 3 women and 12 children. How poor is this success in overcoming the dangers of hemorrhage and septic poisoning, when measured by the claim of Mr. Tait: *six women saved out of seven*, or twice as many saved as in all the rest of the world. Mr. Tait must excuse the incredulity excited by this

Table of Primary Laparotomies

No.	Date.	Operator.	Locality.	Age.	Number of Pregnancy.	Duration of Gestation.	Result to Woman.
1.	Aug. 29, '13	Dr. Brückert	Berlin	32	3d.	9 months	Died in 40 hours.
2.	Dec. 7, '14	Dr. Domenico Novara	Porto Maurizio	28	15th.	9 months	Died in 33 days.
3.		Dr. Mattfeld	Tübingen	24	3d.	19th mo.	Died in 20 days.
4.	Mar. 1, '41	Dr. Hauff	Germany?	?	1st.	34 weeks	Died in 24 hours.
5.	1852	Prof. Pietro Lazzati	Milan			19 months	Died in 29 hours.
6.	Mar. 27, '63	Prof. Eugène Koeberlé	Strasbourg	39	3d.	9 months	Died soon after operation.
7.	Apr. 21, '64	Dr. Robert Greenhalgh	London	40	2d.	8 months	Died in 32 hours.
8.	Oct. 5, '72	Mr. John Scott	London	23	1st.	30 weeks	Died in 5 hours.
9.	Aug. 14, '75	Mr. Thos. Rich'd Jessop	Leeds	26	2d.	33-34 wks	Recovered.
10.	Mar. 5, '76	Prof. Otto Spiegelberg	Breslau	36	3d.	40 weeks	Died in a few hours.
11.	May 25, '77	Dr. Heywood Smith	London	32	14th.	9 months	Died in 22 hours.
12.	Nov. 5, '77	Dr. Henry Gervis	London	39	9th.	36½ w'ks	Died in 56 hours.
13.	Aug. 19, '78	Dr. Ernst Fraenkel	Breslau	34	13d.	38½ w'ks	Died soon after operation.
14.	May 29, '79	Prof. Carl Schroeder	Berlin	33	17th.	34½ w'ks	Died in 36 hours.
15.	June 29, '79	Dr. M. Hofmeier	Berlin	38	7th.	8 months	Died in 36 hours.
16.	Dec. 19, '79	Dr. B. Christian Vedeler	Christiania	40	4th.	35 weeks	Died the next afternoon.
17.	Jan. 10, '80	Prof. C. C. Th. Litzmann	Kiel	29	2d.	9 months	Died in 16 days.
18.	Jan. 31, '80	Mr. Lawson Tait	Birmingham	33	7th.	9 months	Died on the 4th day.
19.	May 11, '80	Dr. Henry P. C. Wilson	Baltimore	24	4th.	9 months	Died in 90 hours.
20.	July 26, '80	Dr. W. Netzel	Stockholm	28	3d.	19 months	Died in 48 hours.
21.	July 9, '81	Dr. August Martin	Berlin	30	3d.	17 months	Recovered.
22.	July 13, '81	Dr. Giuseppe Beisone	Pinerolo, Italy	40	1st.	9 months	Died on the 6th day.
23.	Feb. 15, '82	Dr. Hildebrandt	Königsberg	28	2d.	9 months	Died on the 10th day.
24.	Oct. 3, '82	Dr. Hildebrandt	Königsberg	26	7th.	34½ w'ks	Died in 17½ hours
25.	Nov. 4, '85	Prof. Lazarewicz	Kharkof	27	2d.	9 months	Recovered.
26.	Jan. 29, '86	Prof. A. Stadfeldt	Copenhagen	39	1st	9 months	Died in 38 hours.
27.	Mar. 30, '87	Dr. Joseph Price	Phila Camden, N.	37	5th.	7½ mos.	Died in 14 days.

in Extrauterine Pregnancy.

Result to Child.	Remarks.	References.
Lived	Sac ruptured, and peritonitis before operation. Intestines could not be replaced. Death from peritonitis.	Magazin für die gesammte Heilkunde. Rust, 1819, Bd. iii., S. 1.
Lived	Woman died of slow septicæmia.	Jour. Univer. des Sciences Med., 1816, T. iii., p. 119-124.
Lived	Woman died of subacute peritonitis. Placenta left in place in the iliac fossa.	Neue Zeitschrift für Geburtsk., 1844, Bd. 1, S. 134.
Died in 50 hours.....	Placenta removed by tearing and cutting. Death from "collapse."	Medicinische Annalen (Heidelberg), 1842, Bd. viii., S. 439.
Alive, but did not respire.	Operation demanded by serious condition of patient.	Manuale del Parto Mechanico od' Instrumentale del Lovati, Milano, 1854, p. 191.
Died on 2d morning..	Operation in <i>extremis</i> : prior existing peritonitis: hemorrhage from a tear in placenta.	Gazette Med. de Strasbourg, 1863, T. x., p. 160.
Died in a few minutes	Operation performed in <i>extremis</i> .	Medical Mirror, Nov. 1864, p. 689.
Died on 2d day.....	Pulse 135; temp. 104.2° at operation. Death from heart clot.	Trans. Obstet. Soc., London, 1873, vol. xv., p. 309.
Lived 11 months.....	Fetus free in abdomen; no cyst. Patient in critical condition.	Trans. Obstet. Soc., London, 1876, vol. xviii., p. 251.
Lived 3 months.....	Sac ruptured, peritonitis, pulse 148, before operation: placenta incised; severe hemorrhage.	Archiv für Gynäkol., 1879, Bd. xiii., S. 74.
Heart beat 30 to 40 minutes.	Woman believed to have died of hemorrhage.	Trans. Obstet. Soc., London, vol. xx., 1878, p. 5. Also by letter, 1887.
Died in 6 hours.....	Woman died of hemorrhage.	Brit. Med. Jour., vol. ii., 1877, p. 884.
Died in 24 hours.....	Woman died from detaching placenta.	Archiv für Gynäkol., 1879, Bd. xiv., S. 197.
Lived	Death from hemorrhage, in operation, and on following day.	Zeitschrift für Geburtshülfe und Gynäkol., 1880, Bd. v., S. 115.
Lived	Woman died of hemorrhage.	Zeitschrift für Geburtshülfe und Gynäkol., 1880, Bd. v., S. 115.
Died the next day....	Patient had gonorrheal endometritis, also peritonitis at time of operation.	Norsk Magazin for Laegevidenskab, Juni, 1880, T. B. 6te Hefte, S. 86.
Died in 15 minutes..	Signs of sepsis on 12th day, with repeated hemorrhages: placenta removed on 16th day.	Archiv für Gynäkol., 1880, Bd. xvi., S. 362.
Lived	Death attributed to "prolonged shock."	Obstet. Jour. Great Brit. and Ireland, Oct. 1880, vol. ii., p. 577.
Lived 18 months.....	Patient had high pulse and temperature: collapse; probably septic.	Trans. Am. Gynecol. Soc., 1882, vol. vi., p. 461.
Died in 48 hours.....	Placenta divided in operation, producing severe hemorrhage.	Hygiea (Stockholm), 1881, vol. xviii., p. 169.
Did not breathe, cord pulsated.	Fetus had a large occipital encephalocele.	Berliner Klinische Wochen., Dec. 26th, 1881, Bd. xviii., S. 753-775.
Lived	Patient appears to have died of septicæmia.	Gazzetta Medica di Torino, 1881, vol. xxxii., p. 553-557.
Lived	Woman almost moribund from peritonitis when operated on: sank slowly afterward.	Berliner Klinische Wochen., Nr. xxix., July 20th, 1885, S. 465.
Asphyxiated, was not resuscitated.	Woman operated on in <i>extremis</i> and died in collapse.	Berliner Klinische Wochen., Nr. xxix., July 20th, 1885, S. 465.
Lived 21 days	Cyst and part of placenta drawn out, and pursed up in closing abdominal wound.	Vrach. St. Petersburg, 1886, vii., 76-115. Repertoire Universel de Nouvelles Archives d'Obstetrique et de Gynecol., 25 July 1886, p. 277-279.
Lived	Woman apparently died of internal hemorrhage.	Hospitals Tidende, Sept. 22d, 1886, p. 880.
Died in 4 hours	Sac ruptured, and peritonitis prior to operation. Woman died of hemorrhage.	Communicated by the operator, April 19th, 1886.

startling announcement of his pen in the minds of many here and in his own country. He has chosen, whilst in the frequent habit of reporting his other cases in the journals, to withhold from his professional brethren the details of these. Professor Lazarewicz, of Russia, has done the world a service by showing the method by which he saved the only case yet recorded where gestation was advanced to the full period. Mr. Tait claims that he has a proprietary right to do what he pleases with his own cases: this is true; but how is he going to establish his extravagant claim without giving proof of his having had the individual cases? Men will doubt, and no one has a right to find fault with them for doing it, while the evidence calculated to remove the doubt is not produced. Doubts are not stationary when not removed; they grow into disbelief. Mr. Tait will appreciate the importance of reporting his six cases in detail when he bears in remembrance the charges he made against the hysterectomists of Germany in this JOURNAL for May, 1886, page 487, which were answered in the August number by the late Professor Carl Schroeder.

I have also omitted from my tabular record the complex case of Dr. E. Paul Sale, of Aberdeen, Mississippi, operated upon on March 3d, 1870, first by primary laparotomy for the removal of an extrauterine fetus, and immediately afterwards by hysterotomy, to extract from the uterus a second one. The woman died of septicemia in four days, and the children in six and twelve months, of broncho-pneumonia and measles, respectively. Case 19 was of the same double character, but Dr. Wilson did not deliver the extrauterine fetus by laparotomy until the woman had recovered from the birth of the intrauterine twin; the case is, therefore, a legitimate one for the table.

Secondary laparotomy after the abdominal pointing of a fetal abscess is a very ancient operation. The deliberate opening of a sound abdominal wall for the extraction of a dead fetus is believed to have been done on the first occasion in 1594 by Dr. Paul B. Calvo upon a woman of twenty-six, who died in eleven days. The first primary laparotomy on record dates back but seventy-four years; and the present classification grew, of necessity, from the importance of having distinguishing titles for the operations before and after the death of the fetus; and the term *primary* does not apply to the same ope-

ration if the fetus extracted is too young to be considered of *viable* age, although it may be alive, and live, as such premature infants sometimes do, for several hours. Dr. Goodell had a case of this order a few years ago which proved fatal; a common result, except where the placenta and cyst can be ligated and exsected *en masse*; this can sometimes be done in the fourth, fifth, and sixth months.

According to the calculation of Bandl, of Vienna, one extra uterine pregnancy occurs to twelve thousand intrauterine cases. This may be correct as to hospital work, but it is impossible to make a reliable estimate from all the forms existing in a largely populated kingdom or empire. I am inclined to believe, from what I have met with in private practice, that the cases must be much more numerous. Whatever this estimate should be, it is certain that the operation of primary laparotomy has been of very great rarity. When the operation of Professor Lazarewicz was reported in St. Petersburg, learned gynecologists declared that, although the secondary operation had been several times performed with success in Russia, this was the first instance in which the primary one had been undertaken in that empire. It has never been done in Boston, New York, or Philadelphia, as far as can be ascertained, and the two cases in Baltimore and Camden are all that can be credited to the United States, where the secondary operation has been performed a number of times in the last fifteen years. France is represented by but one case; Italy by three; Denmark, Norway, and Sweden by one each; and London, with her four millions of people, by four, which is a large proportion when compared with many other cities and regions.

329 SOUTH TWELFTH STREET.

September 13th, 1887.

PRIMARY PERINEORRHAPHY.¹

BY

THOMAS E. McARDLE, A.M., M.D.,

Washington, D. C.

IN this paper, by primary perineorrhaphy is meant suturing of the perineum within twenty-four hours after its rupture; by secondary perineorrhaphy is understood an operation performed any time after two months have elapsed since the rupture.

As accidents will happen in the best-regulated families, so they will occur in the practice of the most skilful of obstetricians. When a physician says he has never seen a ruptured perineum in his own patients, we generally conclude that his obstetrical practice is limited, or that he has not carefully observed the women at the conclusion of labor. Much has been said and written concerning the preservation of the perineum from rupture during labor; but notwithstanding the many schemes devised for that end, in a certain percentage of cases the perineum is torn despite the scrupulous care of the most zealous obstetrician. It would be difficult to state, in every case, where the fault lies. Perhaps those who say that the increasing size of the fetal head with increased civilization is the cause of rupture are correct in their views. I am not familiar with the statistics of perineal ruptures in barbarous tribes or semi-civilized nations; but I am so firm a believer in nature's artistic sensitiveness and love for the human race that I have no doubt she will adapt the means to the end in delivering the enlarged fetal head of the twentieth century.

But, theories aside, the fact remains that perineums are constantly being ruptured. Indeed, the recent report of the Columbia Lying-in Hospital of this city gives a record of thirty-two cases in one hundred and thirty-eight deliveries, and Prof. F. E. Beckwith, of Yale, recently reported one hundred and twenty-four lacerations in the delivery of two hundred primiparæ.

¹ Read before the Washington Obstetrical and Gynecological Society, April 1st, 1887.

There may be many reasons why such a large number of perineums should suffer rupture. The perineum may be unusually deep in its antero-posterior diameter, or unusually thin and delicate, or less elastic in its texture than natural; the sacrum and coccyx may not have the proper curve to direct the head toward the pubes; the head itself may be large and unyielding; the uterine contractions may be too violent and rapid to allow the perineum time to become gradually stretched and accommodated to the head. Indeed, there are many causes which may determine this result that are wholly beyond the power of the accoucheur to prevent (F. H. Hamilton). Said a late learned professor: "The perineum can always be saved from laceration when the camel can go through the eye of a needle."

Since, then, so many perineums are torn, and without any fault of the doctor, the query naturally comes, What shall we do with them? Shall an immediate operation for their restoration be performed, or shall we trust to Nature—that all-wise mother—to repair the damage, relying on the intervention of art at a later period, if Nature fails? I am much afraid I will not be able to answer in a manner satisfactory to all the members of this society, but I trust that the discussion which I hope to elicit will be productive of a golden rule for guidance.

For a better understanding of the subject, it is necessary to make a proper distinction between the different varieties of laceration of the perineum. These lacerations may be either incomplete, central, or complete. They are incomplete when, beginning from the vulva, they do not involve the sphincter of the anus; central, when the rupture occurs between the vulva and the anus without involving either of these openings; complete, when the vulva, perineum, and the sphincter ani are torn, together with the recto-vaginal partition, to a greater or less height (Cazeaux).

If this anatomical division would at the same time indicate to us the proper method of dealing with these several lacerations, the subject could be dismissed with a few words, but unfortunately clinical experience has shown that there is a great difference in the ultimate results in individual cases, although the character of the injury may be otherwise the same. Thus it has been shown, upon good authority, that extensive lacerations, sometimes involving even the anus, have healed

spontaneously, if not by first, at least by second intention. This occurred in one case under Tarnier's observation, and M. Huguier has seen fifteen or twenty which terminated in the same way. Such being the case, the natural cure cannot be a very rare occurrence. On the other hand, it has also happened that, where the greatest care has been exercised in bringing the torn surfaces together by sutures, they have not united. This proves that the anatomical feature is not the basis upon which alone we can construct a formula for treatment, but that other things must be taken into account, as the condition of the patient, both general and local, the time and method of suture, the proper after-treatment, etc.

The advocates of immediate operation claim :

1. That the patient is in a better condition to bear the operation immediately after labor than subsequently, on account of the obtunded sensibility of the genital parts.

2. That posture alone will not suffice for primary union, because the least change in position will disturb the apposition of the surfaces.

3. That although the rent in the perineum is a lacerated wound, it partakes almost of the character of an incised wound, and the surfaces will readily unite if brought together immediately after labor.

4. That in order to prevent the irritating action of the lochia on the torn surfaces, the wound ought to be closed immediately by sutures.

5. That, no matter how slight the laceration, it ought to be sutured, in order to restore the parts to their primitive condition; also because the slightest rent may endanger life by sepsis (Wenning, *Medical News*, Vol. XLVIII., page 483).

Let us now examine these arguments critically.

My limited experience does not go to prove the truth of the first proposition. It is true if chloroform or some other anesthetic has been used during the delivery, it can be continued, and the sutures can be introduced without pain to the patient. But it is my habit not to use an anesthetic during labor except in those cases where I am governed by some peculiar circumstance or the express wish of the patient. I hold that as a rule anesthetics retard labor and increase the chances of post-partum hemorrhage.

If, then, an anesthetic is not used during the insertion of the

sutures, I have not found the sensibility of the genitalia so obtunded as to render the operation comparatively painless. Indeed, I have heard the patient complain as much during the primary restoration of the perineum without an anesthetic as when the child was being born. It is true, the pain was not of so long duration. It is exceptional that a woman is not thoroughly exhausted after labor, especially after her first accouchement, during which most of these lacerations occur, and she needs nothing so much as absolute rest. Her health or life may not be endangered by the operation, yet cases have occurred in which profuse uterine hemorrhage was the result of shock caused by primary perineorrhaphy.

Before answering the second and third propositions, it may not be amiss to ask if union by first intention is always the result of a primary operation. It cannot be doubted that the tear is oftentimes so straight and clean-cut that union by first intention takes place with no other treatment than posture and absolute cleanliness. When we have a lacerated wound to deal with, even approximation by suture will rarely result in union by first intention. Secondary union will occur just as it does when posture and cleanliness are relied upon. I contend that posture and antisepsis will often result in a cure through the secondary processes of granulation, the cicatrization and restoration commencing at the angle of the wound where the laceration terminated.

As to the fourth proposition, it may be said that perfect cleanliness will preserve the torn surfaces from the irritating action of the lochia. Richardson states, in considering the etiology of puerperal septicemia, that "to-day it is unquestionably admitted by many leading obstetricians that the infection must come from without. The problem is unquestionably how to keep bacteria out of the body. Without their entrance there will be no septicemia." So we are not to dread sepsis from the lochia unless that discharge is rendered septic from without, and it is believed that scrupulous cleanliness will render such a thing possible. Is it not better to have an open wound which can be thoroughly cleansed than to run the risk of making pockets where stagnation of lochial fluid may occur and more readily become septic? Is it possible to so hermetically seal the many orifices in this vascular region as to prevent the absorption of some septic material?

If one believes in the immediate suturing of the ruptured perineum, he must make the fifth proposition his rule of practice. It is the only logical one he can have. No matter how slight the laceration, it ought to be sutured in order to restore the parts to their primitive condition and to remove all danger of sepsis. Just here it may be remarked that physicians will descant with great eloquence on the dreadful lacerations they have restored by the aid of a few stitches inserted immediately after the occurrence of the rupture. But we must not forget that "the ostium vaginae just after delivery is, in its overdistended and always slightly lacerated condition, with folds of redundant vagina pressing down upon it, a most deceptive part" (Thomas). The accoucheur may often be deceived as to a serious laceration immediately after delivery. If he will observe the perineal rent just as it occurs after the passage of the child's head or shoulder, and then will re-examine it after a day or two, he will be surprised at the difference in length. A rent which he supposed to be an inch or an inch and a half in extent will be found to measure the fractional part of an inch.

From what has already been said, I think we can easily deduce that whilst primary perineorrhaphy is rarely a source of danger to life, yet it is cause of great pain and discomfort to the patient. As far as sepsis is concerned, the patient's danger may be increased rather than lessened by the immediate introduction of sutures. Moreover, nothing special is gained by a primary operation, for, if posture and cleanliness fail, art can accomplish after the lapse of a few months a better result than could have been obtained from the introduction of a few stitches at the time of rupture. Before leaving the subject, I would like to ask what became of the women whose perineums were ruptured before the invention of either the primary or secondary operation? Did one out of every four child-bearing women suffer all the torments so graphically described by gynecologists as resulting from a non-restored perineum? Good results, the older practitioners say, were obtained from posture and cleanliness. Besides, many women have ruptured perineums who are unconscious of the fact except for the knowledge that their labors are somewhat easier and quicker than before. If any trouble should arise, a secondary operation will often give the woman a better perineum than she had at first.

THE VALUE OF THE GENU-PECTORAL POSITION IN
DIFFICULT VERSION.¹

BY

H. M. CUTTS, M.D.,

Washington, D. C.

THE use of the genu-pectoral position in obstetrics (for reducing prolapsed cord) and in gynecology is well known, so I need not tell you what it is. Suffice it to say that it is *the* most unmaidenly posture the "female form divine" can assume, while for awkwardness, especially when the patient is anesthetized, it reminds one of what an elephant on skates might be. Not very much better, however, is the Mexican practice of suspending the woman by the heels, in transverse presentations, and shaking her until the head presents.

The position may be absurd, but it has its values, and not the least of these is when, during parturition, the child presents such a portion of its frame as to render delivery in that position impossible and makes version necessary, but difficult or scarcely possible by other means.

According to Parvin, Deventer was the first to suggest the position in version, Smellie recommended it fifty years later, Bard was the first American writer to mention it, and Shippen was the first American to teach it in this connection.²

I find that Deventer, in the original edition written in Latin in 1701, says something about it at page 178. In the more easily assimilated translation, published in London in 1746, I find, in speaking of version in transverse presentations, the following: "that it is requisite for the woman in labor to lie forward upon her knees, or to incline to her right side, and for the most part prone." When "the womb is obliquely placed, the hands and (or) feet offering themselves in the passage, and the waters being flowed out" his instructions to the midwife are "to move the mouth of the womb in some measure into its place, as well as she can to direct it into the open pelvis."

¹ Read before the Washington Obstetrical and Gynecological Society, on April 15th, 1887.

² Am. Pract., 1877, vol. 15, p. 26.

I can find but two cases of Smellie's in which the knee-chest position is mentioned as having been used, and both of these were in shoulder presentation of the fetus. He, however, advises it in breech presentations to turn them into footlings, and in giving general directions for the position of the woman in all cases of version he states "that the woman ought to be laid upon her back, her breech upon the side or foot of the bed" bolstered up so as to be higher than her head. This seems to be a sort of compromise on the genu-pectoral position, a little more graceful perhaps, but not so useful.

I cannot find in Bard any allusion to the method under discussion, nor have I been able to find how Shippen taught his students. We must once more, therefore, accept Dr. Parvin's assertion that these two gentlemen, as well as Deventer and Smellie, used the posture for podalic version only.¹ All these men performed the version by internal and external manual effort.

On the other hand, Dr. Maxson recommends it for cephalic version, so to him is due the discovery of this more desirable possibility.

Dr. Maxson having been called in consultation in a case of transverse presentation with the hand in the vagina and the cord prolapsed, put the woman in the genu-pectoral position with the idea of reducing the cord after the manner of Dr. T. G. Thomas. The cord having been reduced and the woman having been once more laid on her back, he was surprised to find that the fetal position had changed and that the head was presenting and already engaged. His manipulations had been of the gentlest character, so that his conclusions were that the *posture* in which the woman had been was the cause of this unexpected and gratifying result. Shortly after this, he applied the knowledge gained by this experience to another case of transverse presentation, this time with the expressed intention of doing cephalic version. The result was in every way as successful as had been nature's effort in the first case.

While it is hardly necessary, as we have said, to describe the genu-pectoral position, it will not be out of the way to give, not quite in his own words, Maxson's way of preparing his patient for the version and his injunctions for its accomplishment.

¹ Am. Pract., 1877, vol. 15, p. 129.

In the first place, the cervix must be dilated enough for the hand to be admitted into the uterus. Then the woman is made to kneel upon about eighteen inches thickness of folded quilts, blankets, or pillows in the middle of the bed, her face being brought down forward upon a pillow, so as to bring the body to an angle of forty-five degrees with the bed.

The attendant places himself on the side towards which the womb is reclining and opposite to that to which the head of the child has been pushed. Then with one hand gently pressing externally, the other hand, well oiled, is carried into the vagina, the prolapsed limb, if there is one, is replaced, and the presenting part is reached. If this has receded, the hand is gradually insinuated into the uterus; if not, it is pushed gently upwards, being followed by the hand, and in both cases, when the hand is within the uterus, it is cautiously spread out and the vertex grasped, drawn down, and held for a pain or two until perfectly engaged.

The external hand is meantime pushing the fundus uteri into the median line. "The woman is now turned down upon that side to which the head of the child was directed." Maxson goes on to say that "in some cases no internal manipulation may be necessary, as I have found the position and external hand and pressure doing all. In cases, however, in which there may be no apparent lateral obliquity, the child tipping forward in a very anterior projecting abdomen, it becomes a matter of indifference upon which side the attendant places himself, or which hand is used internally or externally, as the back is the best position. It tends by the action of gravity, as in other cases, to favor the entrance and engagement of the head, as well as the subsequent stages of labor."¹

It would seem to me that the right hand might easily always be used for insertion into the uterus, if the accoucheur finds that the most agreeable place for that hand, the left being used externally to push or *pull* according to the way the fundus is tipped.

It makes a very considerable difference with some men in the "finish" of an operation as to which hand plays the most important part. This would place the operator always to the woman's left. She could be "turned down" as directed by Maxson, with the right hand still grasping the head.

¹ Am. Practitioner, 1877, vol. 15, p. 129.

What happens to the abdominal organs when the genu-pectoral position is assumed?

For the changes which take place in the non-pregnant woman, I will refer you to Wood's edition of Hart and Barbour, vol. 1, page 80. In the gravida at term, much more marked changes must occur, as the weight of the fetus and fluid, added to the large uterine tumor, must crowd things considerably.

The "helps" the posture lends to version are:

1. The downward pressure of the atmosphere upon the fundus uteri is, at least in part, equalized by the admission of air into the vagina.

2. "We have the force of gravity to aid us. The weight of the child naturally drags the presenting part from the os uteri and pelvic cavity, and by so much relieves the impaction." (Hildreth, *Am. Jour. Med. Sciences*, April, 1866.)

3. "The abdominal cavity is elongated, putting the vagina upon the stretch, thereby giving it a cylindrical character, thus aiding to throw the head into line with the superior strait." (Maxson, *Am. Prac.*, March, 1877.)

4. "The woman cannot, in this position, to any extent exert her voluntary muscles in bearing down." (Hildreth, *Ibid.*)

5. "We get rid in a great measure of the superimposed weight of the abdominal viscera and the resistance offered by the promontory of the sacrum, should any part of the child be impacted below it." (*Ibid.*)

6. "The liquor amnii is much more likely to be retained until we accomplish the version." (*Ibid.*)

7. "The uterus with its contents recedes from the spine and by force of gravity tends to relax the abdominal muscles and hence favors our manipulations." (*Ibid.*)

8. "It is more than probable that in this position the uterus will be found physiologically to contract less violently and relax more readily than when the patient is on the back or side." (*Ibid.*)

I will now give a few cases to illustrate the success of the posture in difficult version, bringing out especially, 1st, why version was necessary; 2d, what was tried before the genu-pectoral position; 3d, the condition of the membranes; 4th, the presentation of the fetus after the genu-pectoral position; and 5th, the termination of labor.

CASE I.—Woman in her fourth labor. The first and third children had been sacrificed by craniotomy because of a distorted pelvis “from the three lowermost vertebræ of the loins bending forward.” In this labor, the shoulder presented, and, on account of the strong pains, version could not be accomplished with the woman on her back. She was put in the knee-chest position, podalic version was easily performed, and a live child was delivered. (Smellie, Collection XXXIV., No. II., Case II.)

CASE II.—Left arm and shoulder of the fetus presenting. Membranes ruptured. Version with the woman on her back impossible. Placed upon her knees and chest; but, on account of her struggles and the weariness of the operator, version was not accomplished. She was again laid on her back, the breech was greatly raised, and podalic version was finally performed and a live child delivered. (*Ibid.*, Case III.)

CASE III.—Shoulder presentation. Three previous children born dead. Put at once in the genu-pectoral position, cephalic version performed, and nature terminated successfully the rest of the labor. (Maxson, *Am. Pract.*, March, 1877.)

CASE IV.—Fourth confinement. Two previous labors the arm had presented, and, turning being impossible, in both cases embryotomy was performed. The arm again presented, and the membranes had been ruptured twelve hours. Turning, with woman in the usual position, impossible.

Woman put in the genu-pectoral posture, shoulder receded, podalic version easily done, and spontaneous delivery soon followed. Chloroform was used during the version. (Hildreth, *Am. Jour. Med. Sc.*, 1866, vol. LI.)

CASE V.—Fifth confinement of Case IV. Same circumstances and termination as above case, except that no chloroform was used, upon which the attendant remarks that “there was but little resistance by the uterus, and not much suffering by the mother.” (*Ibid.*)

CASE VI.—Left hand and several inches of umbilical cord protruding from vulva. Membranes, of course, were ruptured. Woman placed upon her knees and elbows, in order to reduce the cord as recommended by Thomas. The advantage of the position as an aid in changing the position of the fetus at once struck the operator, and he proceeded to replace the arm, which he soon accomplished. The head dropped, of its own accord, into the first position, and labor was terminated in two hours. (Hadden, *N. Y. Med. Rec.*, 1866-1867, vol. I.)

CASE VII.—The attendant states “that the liquor amnii was discharged, and the arm was in the vagina. The pains were strong, and the shoulder was pressed firmly into the superior strait. No anesthetic was used. The genu-pectoral position was tried and no difficulty was found in displacing the shoulder enough to introduce the hand into the uterus. The force of the pains seemed materially diminished by the change of posture. After securing a foot, I was surprised at the facility with which version was

accomplished." Termination of labor easy. (Bigham, *Am. Jour. Med. Sc.*, 1866, vol. LII., p. 408.)

CASE VIII.—Bag ruptured, left hand reaching out of vagina. Face in right iliac fossa, and left shoulder-joint far down in lower strait. Pains strong for twelve hours. Attempt at turning with the woman in usual position was unsuccessful. With the woman in the genu-pectoral position, the hand was readily introduced, the child was gently lifted out of the pelvis, the feet were seized and brought down, and in three quarters of an hour the child was born. It was dead and had probably been so for some hours. (Lueck, *Phil. M. and S. Rep.*, June 25th, 1870.)

CASE IX.—Patient in good health; pelvis normal; in labor sixteen hours. Left shoulder presenting; back anterior, and head in right iliac fossa. Os half-dilated; membranes unruptured; uterine contractions irregular and weak. Attempt to convert into head presentation by the method of Dr. M. B. Wright failed. Patient put in genu-pectoral position, to facilitate version, when it was found that the shoulder had receded, moving upwards and towards the right side of the false pelvis. Assisted motion with fingers, and in ten minutes obtained a presentation of pelvis and feet, with the sacrum towards the right sacro-iliac symphysis. Patient was turned on her back after the membranes were ruptured. The child was born alive. (Parvin, *Am. Pract.*, vol. XV., p. 26.)

CASE X.—Woman in labor sixteen hours. Right shoulder presenting; head left; dorsum anterior; membranes unruptured. Genu-pectoral position tried at once. Slight pressure with left hand internally on shoulder caused it suddenly to recede, and the head dropped into place. A live child was born in fifty minutes. No anesthetic used. (Linton, *Am. Pract.*, vol. XVI., October, 1877.)

CASE XI.—Placenta previa. The placenta had been detached and delivered, and the child was caught in a transverse position, with the left shoulder presenting, and the arm in the vagina. The first attempt to turn with the woman in the genu-pectoral position was unsuccessful, but on a second trial podalic version was easily accomplished, and labor terminated without trouble. The child was, of course, dead. (*Ibid.*)

CASE XII.—Pains for some hours; membranes ruptured by the examining finger; arm in the vagina. Genu-pectoral position and podalic version without difficulty. The head, however, caught on a projecting sacral promontory, and, while waiting for the long forceps to deliver with, the child died. (Heustis, *New Orleans M. and S. Rep.*, 1877-78, p. 435.)

CASE XIII.—Had previously delivered the woman of a dead child, having been forced by a transverse presentation to do podalic version with the patient on her back. The arm was down, and the membranes were ruptured in this labor. Tried both external and conjoined manipulation to change the position, but without success. Put the woman in the genu-pectoral position,

and without trouble did cephalic version, when the labor terminated rapidly and safely.

The same gentleman mentions two other cases, but does not give any history of them. (*Ibid.*)

CASE XIV.—Woman in labor forty-eight hours. Found the fingers of both hands in the vagina, the palms together. Attempted to turn, but could not reach either head or feet of the fetus. Ergot had been given, and the pains were very strong. Tried turning in the genu-pectoral position, but did not succeed. Finally chloroformed the woman and delivered her of a dead child. (Perkins, *Med. Rec.*, vol. XIX.)

CASE XV.—Had had trouble from malpresentation of the fetus in several previous confinements. When seen this time, the membranes were ruptured, and the presentation was transverse. Could not do version in the ordinary position. Put the woman in the genu-pectoral position, and accomplished cephalic version without trouble. Immediately after turning her down, the uterine pains ceased and were suspended for eight hours, when labor terminated safely. The posture seems to have delayed the contractions. (Fowler, *AM. JOUR. OBST.*, vol. XV., 1882.)

CASE XVI.—Membranes unruptured; cross position. The attending physician had failed in trying version. The woman was put in the genu-pectoral position, and cephalic version was speedily done. The termination of this case is unknown, as, labor having been suspended by the posture, the family dismissed the attendant and sent for another doctor. (*Ibid.*)

CASE XVII.—Woman under size; left hand and arm in the vagina. She was turned on her knees and elbows, and cephalic version was easily done.

Delivery was delayed several hours, but the labor terminated all right. (*Ibid.*)

It will be seen that what Maxson calls the "posture treatment" has made easy an operation that in certain presentations is always difficult and sometimes impossible, and that it has avoided the hideous operation of embryotomy which, barring an occasional spontaneous version, would have been in many instances the only alternative under the circumstances. It will also be seen that in all the cases a transverse presentation made version necessary; that in many of them other methods had failed; that in a large majority of cases the membranes were ruptured before the version was undertaken; that cephalic and podalic version were accomplished about equally, and that in every case, except one unknown, the labor and puerperium terminated without complications to the mother. In four cases, the child was born dead, but in no instance was this the fault of the posture; in two cases, the position failed to bring relief.

In none of these cases has the use of antiseptics been mentioned.

I think we may conclude, therefore, that, in transverse presentations at least, the genu-pectoral position is an invaluable adjunct to the safety of both mother and child; that version with it, may be undertaken any time after the complete dilatation of the os, and without regard as to whether the membranes are ruptured or not, and without waiting for an anesthetic. The only thing we have to consider is whether we shall do cephalic or podalic version, for it appears that we have our choice of either. This choice depends so much upon the individual case, and opens up a subject outside the paper's intent, that I shall not allude further to it.

It would seem also that combined manipulation is not always necessary, for in several instances nature brought the head into the inlet.

The only complication so far noticed is the inertia uteri which was observed in Cases XIV., XVI., and XVII., but which did not prevent a favorable termination of the labor.

As has been said, Smellie uses the posture for converting a breech into a footling,¹ and I cannot help thinking that it may be of service in other conditions, as, for instance, face presentations. It seems probable that the posture would render easy Hodge's method, in face presentation, of flexing the head by internal and external use of the hands, or it might possibly obviate the necessity of inserting the hand into the uterus at all.

The first case of Smellie's suggests its value in certain bony deformities and, lastly, its use in occipito-posterior positions; when nature has proved herself inadequate to effect rotation of the head, it may be hinted at.

I have been surprised to find how little is said of the genu-pectoral posture in regard to its obstetrical uses. Except to mention it in speaking of prolapsed funis, I can find nothing about it in the modern text-books on obstetrics. The journal literature, also, contains a wonderful dearth of reported cases, from which, I take it, the method has not often been tried. The "boom" given it by Maxson was short-lived, and thus, in my opinion, a valuable expedient has been relegated to desuetude.

CORRESPONDENCE.

EXPULSION OF AN OVUM "AT TERM" WITH MEMBRANES INTACT.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—I send you herewith a contribution to the study of "Rare Clinical Observations in Obstetrical Practice," with which I should like to supplement Dr. Busey's article published in your September issue.

I notice that he states after the relation of his first case, "I have never witnessed the expulsion of an ovum 'at term' with the membranes intact; nor would I permit such a delivery to occur, if avoidable." (Page 922, vol. XX.)

The case which I herewith report is one in which this apparently unique complication occurred, and which seems to me to have been unavoidable.

Mrs. W——, primipara, æt. 19, began to have pains on the night of Sept. 20th, 1885; these lasted more or less severe until about midnight of the 24th inst. I made an examination then, and found the os dilated to about the size of a silver half-dollar, and was able to make out the head in the L. O. P. position; the os was very rigid. At 3 A.M. I was called again, and found the os dilated to size of a dollar, and more patulous. The pains were more severe and frequent, and the bag of waters was forming nicely. I remained at the patient's house at the request of the family, and made several examinations to test the power of the pains and notice the child's advancement. At 5 A.M. the bag of waters was well formed, and about an hour and a half later, they called my attention to the fact that water was coming away from her, but on examination the bag was found still tense, firm, and very large; though some fluid had undoubtedly escaped from her—it was not urine, as her bladder had been relieved a short time previously. At 7 A.M., as the pouch reached almost to the vulva and seemed to retard rather than assist labor, I determined to rupture it. The membranes were punctured at the *height* of a pain with a hairpin, having previously tried to do it with my nail in an interval, but not succeeding on account of the tough-

ness of the membranes. Some small amount of liquid escaped, but no rupture occurred; thinking it had not been punctured through or the pouch was not tense enough, the next pain was waited for, and at its height a second and *third* puncture were made with no better success than a slow dribbling away of the fluid.

At 10 A.M. there was still a large pouch presenting at vulva. The pains were very severe, but advancement was slow, and it was near 3 P.M. before the head engaged under the arch of the pubis.

After the expulsion of the child, it was noticed to have a dull grayish appearance, and was thought to be dead, as it neither moved, cried, nor made any effort at inspiration. It was lying with its arms crossed on its chest and its legs flexed, as in utero. On trying to wipe the nose and mouth, a wrinkling of the membrane was then noticed, and as it proved too tough to be torn down, the shears were brought into use. The membranes were intact, except for the three small slits caused by my punctures.

As soon as the child was relieved of its investing envelope it began to inspire, and proved to be a well-formed female child.

There was some fluid still in the sac, which was of a bluish-gray color, very fibrous; the substance of which it was composed could be seen to interlace in various directions.

The third stage presented nothing abnormal. The parents of the child are healthy and have good family histories; the infant was seen about six months ago, and had developed into a fine, robust girl.

Yours truly,

J. A. HOFHEIMER, M.D.

236 WEST 126TH STREET, NEW YORK.

CATTLE-HORN CESAREAN SECTION.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the October number (1887) of the AM. JOUR. OF OBSTETRICS, is a record of an eleventh bovine Cesarean rip, kindly furnished very opportunely by Dr. Semeleder, of the city of Mexico. A twelfth case (?) which he thinks was overlooked by me is the fourth in my record, and belongs to Candebec, a little town on the Seine about ten miles from its mouth; in “*La Seine Inferieure*,” as given by Dr. Witkowsky; but not at

"Frenaye." The casualty occurred in 1789, nearly two hundred years after the book by Rousset (1581), "*Traité nouveau de l'hystérotomotokie ou enfantement Césarien*," in which Dr. Semeleder erroneously places it, appeared. My case three was not wounded by a bull, or at a bull-fight as related by Witkowsky, but by an ox as plainly stated by Dr. Di Zubeldia, who was called to see the woman at 8 A.M., in midsummer.

Dr. Juan Maria Rodriguez, who performed a Porro operation on March 12th, 1884, which ended fatally to the woman, was not the first Cesarean operator in Mexico. In September, 1877, Drs. J. B. and J. H. Mears were called in consultation by a Mexican surgeon of Monterey, and performed the Cesarean operation on a Mexican woman having a sacral exostosis. She had been long in labor, and the child was destroyed by craniotomy twenty-four hours before; the wound healed by the first intention; the woman sat up in fifteen days, and was about in twenty-five. The child, without its brain and parietal bones, weighed ten pounds. (*Phila. Med. and Surg. Reporter*, Oct. 27th, 1877, p. 328.)

The Cesarean operation has been performed twice in Jamaica, twice in Martinique, twice in Tortola, one of the Virgin Islands, twice in Cuba, twice in Mexico, and once in Canada, saving eight out of the eleven women.

ROBERT P. HARRIS, M.D.

OCTOBER 12TH, 1887.

ACUTE DILATATION OF STOMACH FOLLOWING LAPAROTOMY,

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the transactions of the American Gynecological Society, appearing in the October number of your valuable JOURNAL, I notice the record of a case of death from acute dilatation of the stomach, following laparotomy, by Dr. J. B. Hunter.

The rarity of such cases has induced me to place on record a similar one which has just occurred in my practice. The patient was about forty years of age and unmarried; she was sent to me by Dr. Banker, of Rhinebeck on Hudson, on account of a myofibroma of the uterus which was growing rapidly and breaking down her general health. On Sept. 26th I made a supra-vaginal hysterectomy which was done without trouble. The pedicle was

transfixed with Wilcox pins and the india-rubber ligature applied; tumor cut off, cauterized, iodoformed, left extra-peritoneal. The operation lasted about thirty-five minutes, and there was comparatively no bleeding. Everything went well for the first day, when gradual distention of the abdomen took place, and she began to vomit or rather gulp up mouthfuls of fluid. The temperature was not high, probably 102° , and I believed she was suffering from peritonitis. There was a short respite between these attacks, during which she would doze, only to be aroused by fresh regurgitation, the fluid toward the last being brownish, flaky, and having the peculiar odor of the ingesta in gastritis. She died upon the fifth day from asthenia, and upon making the usual post-mortem incision in the linea alba, there protruded immediately what at first I thought must be an enormously distended colon. Further examination showed that it was the stomach, occupying the whole abdominal cavity, and holding by actual measurement, after its removal, thirteen pints of fluid. There was not a trace of any diseased action in any other of the abdominal organs, except the head of the duodenum, which was also slightly expanded. These two cases coming so near together, with symptoms so exactly similar, may be of advantage as pointing to diagnosis and prognosis.

Very truly yours,

WM. TOD HELMUTH.

OCTOBER 12TH, 1887.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, October 4th, 1887.

The President, DR. PAUL F. MUNDÉ, in the Chair.

HYSTERECTOMY FOR FIBROUS TUMOR OF THE UTERUS—DEATH FROM SEPTICEMIA.

DR. H. T. HANKS narrated the following case: Mrs. D., æt. 53, married thirty years ago, had one child twenty-nine years ago, after a normal labor. She has had six miscarriages, all before the third month. Her menstruation began between thirteen and fourteen, and was quite normal in the amount and the time of recurrence until seven years ago, when she began to have occasional profuse hemorrhages. She was curetted at the Post-Graduate School in January, 1887, at which time she was much ema-

iated and anemic. The uterus was four inches in depth, but no polypus could be detected with the sound, nor could any nodules be felt on the exterior of the uterus on bimanual examination. The fungosities removed by the curette were neither large nor numerous. The diagnosis of fibrous tumor of the uterus was made at that time before the class. The patient was kept under observation, and improved slowly by the administration of ergot and tonics. She entered the Woman's Hospital, February 23d, and was examined under ether. The uterus was found to be quite uniformly enlarged, more especially at the posterior aspect and fundus; some small masses were removed by means of the sharp curette which the pathologist, Dr. H. C. Coe, reported to be simple hypertrophied mucous membrane. The uterine cavity was swabbed out with iodine, and twenty-five drops of the fluid extract of ergot were given three times daily, with tonics and generous diet. Although her general health improved, the hemorrhage recurred, whereupon it was resolved to dilate the uterine cavity, according to Vulliet's method. Tents were introduced, and after two days it was possible to pack the cavity very tightly with small iodoform cotton-balls. These were allowed to remain for twenty-four hours and were then removed, and a larger number were introduced. On the following day a careful digital examination was made, and no intrauterine polypus was found; it was believed that the hemorrhage came from the hypertrophied endometrium. The patient had no more hemorrhages until June 23d, after her discharge from the hospital.

September 15th, 1887, she was readmitted to the Woman's Hospital, on account of almost continuous hemorrhage. Her general condition was decidedly better than it was when she was admitted the first time, but the uterus was as large as ever. She had taken ergot constantly throughout the summer. It was believed that a more radical operation was demanded, and it was decided to make an explorative incision, and to remove the tubes and ovaries, or the uterus, as might seem to be justifiable at the time. As Dr. Bantock, of London, was visiting our city, he was invited to perform hysterectomy, which he did, after his usual method, September 29th. The tumor removed was submitted to the pathologist, Dr. Coe, who found that it consisted of the body of the uterus, enlarged by reason of an interstitial growth, which was mostly confined to the posterior wall. Within the cavity was a fibrous polypus, about the size of a marble, which sprang from the fundus at a point midway between the openings of the tubes. There seemed to be no reason to doubt that the hemorrhage was due primarily to the presence of the latter growth.

The patient presented no unfavorable symptoms until October

7th, when she showed evidences of acute septicemia, and died the same evening. A partial examination of the body showed that a pus-cavity existed on one side of the pedicle, which had communicated with the peritoneal cavity. There was no general peritonitis.

DR. COE cited the case of a woman who continued to flow profusely for several months after the removal of the tubes and ovaries. Supra-vaginal amputation was finally performed as a last resort, a moderately enlarged uterus being removed. The speaker examined the specimen carefully, and could discover nothing about it which tended to throw light upon the cause of the hemorrhage. The enlargement of the organ was due to chronic hyperplasia, while the endometrium did not present any marked degree of hypertrophy. Curetting had failed to diminish the flow.

THE PRESIDENT stated that he had recently seen a case in which hemorrhage had persisted after removal of the appendages. On examining the patient, he detected on one side of the uterus a small mass which might be a hematoma, the contents of which were discharged into the uterine cavity.

DR. TUTTLE believed that greater care ought to be exercised in diagnosing intrauterine growths, especially where hysterectomy was proposed. He cited two cases within his own knowledge, in which the uterus had been removed for supposed malignant disease; in one case, in which the patient recovered, the diagnosis of sarcoma was disproved by the microscope; in the other, which terminated fatally, the hemorrhage was found to have been due to a submucous polypus. Foreign surgeons rarely proceed to remove the uterus until a careful microscopical examination of portions of the suspected growth had been made.

VAGINAL HYSTERECTOMY FOR EPITHELIOMA—RECURRENCE AND DEATH
IN TWO MONTHS AFTER THE OPERATION.

THE PRESIDENT exhibited a specimen and narrated the following. The patient was brought to him for examination in July. He found that the disease was so extensive as to involve the vaginal vault, and that it was impossible to determine exactly whether the periuterine tissues were affected. He operated on the 19th of July, following a modification of Fritsch's method. After removing the exuberant growth with the curette, he was able to draw down the uterus easily. The uterine arteries were first ligated with considerable difficulty, owing to want of room. The posterior cul-de-sac was first opened, and the peritoneum was attached to the cut edge of the vagina with catgut sutures; then the anterior pouch was opened and the peritoneum sewed as before. The bladder was so prolapsed that it was necessary to push it upward, while dissecting it away. The broad ligaments were next divided, a sufficient number of ligatures being applied to completely control the hemorrhage. The ovaries were removed subsequently. The patient's temperature did not rise above 99°, and her recovery from the operation was unusually rapid, but the disease quickly

recurred, as it had been impossible to remove it completely. Early in September a fistula was formed in the bladder, and soon after the rectum was involved. The patient died on the 29th of the same month. The reporter added that, although the case proved to be unsuitable for operation, he had thought it justifiable to give her the chance; she would probably have died at about the same time if it had not been performed. He had performed vaginal hysterectomy for cancer six times, four patients recovering from the operation; in all but one case the disease returned within a year.

PAPILLOMA OF THE OVARY, WITH SECONDARY DISEASE OF THE PERITONEUM.

THE PRESIDENT showed two specimens of papillomatous material, one of these came from the interior of an adherent ovarian cyst which was filled with similar masses; on removing the latter, there was free hemorrhage, which was checked by irrigation with hot water. The sac was then packed with gauze, which was left in situ until the sixth day; it closed by granulation.

In the second case, the abdomen was filled with ascitic fluid. An explorative incision revealed the presence of a papillomatous mass that filled the pelvis, involving the uterus, ovaries, and bladder. No attempt was made to remove it. The patient recovered.

DR. HANKS cited the case of a patient upon whom he had operated a week before, removing about two-thirds of an adherent intra-ligamentous cyst, and stitching the remains of the sac in the wound. The cyst contained a quantity of papillomatous material the removal of which was followed by hemorrhage, this was controlled by washing out the sac with a solution of persulphate of iron.

DR. LEE called attention to the tendency of papilloma to spread to the peritoneum. Hence, in all cases of papillomatous cyst, the peritoneal cavity ought to be carefully explored for evidences of secondary disease. He referred to two cases of his own in which he had maintained permanent drainage. This was advisable on account of the tendency of the ascitic fluid to reaccumulate.

DR. COE called attention to the fact that some of these papillomatous cysts (which were essentially malignant from a clinical standpoint), were really cysts of the broad ligament. Although the latter were thought to be so innocent in character, it should be remembered, as Doran had shown, that after tapping they might assume a papillomatous form.

THE PRESIDENT thought that when the papilloma had not penetrated the cyst-wall, there was less danger of its spreading to the peritoneum. In the second case reported, the ascitic fluid had not reaccumulated after the lapse of three weeks.

SUCCESSFUL PERFORMANCE OF OVARIOTOMY FOR THE THIRD TIME IN THE SAME PATIENT.

THE PRESIDENT presented a specimen and related the following history: The patient was operated upon the first time in March,

1881, by Professor Küster, of Berlin, a portion of an adherent cyst of the left ovary being removed and the sac included in the wound. The right ovary at that time was found to contain several small cysts which were punctured and injected with carbolic acid. On November 17th of the same year, she returned to Professor Küster with a cyst of the right ovary, which was found to be intraligamentous and adherent. A portion of this was removed and the sac stitched in the wound as before. Last May she came to the speaker with a large ventral hernia, which on examination he found was due to the presence of a *third* cyst that filled the abdominal cavity and crowded the intestines forwards. He operated on the sixth of May, and found a large cyst which seemed to spring from the left broad ligament, near the floor of the pelvis. It contained a thick, albuminous fluid, quite different from that usually found in such cysts, and also a piece of bone, so that it was probably dermoid in character. The tumor was successfully enucleated, the sac sewed to the wound and drained, and the patient made a good recovery. The speaker thought that this was the only recorded case in which the patient had survived after the successive removal of three different pelvic cysts.

DR. HUNTER asked if the incision had been made in the line of the old cicatrix.

THE PRESIDENT replied in the affirmative, and added that the ventral hernia had been cured.

DR. TUTTLE thought that perhaps the third cyst was similar to the extraperitoneal form described by Mr. Tait, that developed from the urachus.

THE PRESIDENT said that this explanation had occurred to him at the time of the operation, but the cyst was entirely separated from the abdominal wall.

DR. LEE thought that we should be very careful to tell patients, before performing ovariectomy, that if the opposite ovary was distinctly cystic, it would be advisable to remove it, because, if such a patient had a tendency towards the development of an ovarian cyst, she would be more apt to have a second one develop from a cystic ovary than would be the case where she had never had a cystoma.

DR. HUNTER did not believe that it was at all certain that the small cysts found in ovaries tended to form large cystomata. He recalled several cases in which women, in whom the remaining cystic ovary had been spared after removal of an ovarian cyst, had afterward borne children.

DR. LEE admitted that the patient's wishes should always be consulted first. In the majority of the cases, however, there was risk in leaving cystic ovaries.

DR. DIRNER, of Pesth (present by invitation), did not approve of removing the second ovary unless the cystic degeneration was advanced. Small cysts could be punctured without impairing the functional integrity of the ovary, or preventing future conception. With our modern antiseptic methods, a second operation was not especially dangerous.

DR. LEE, in reply to Dr. Hunter's objections to the statement

that a second cystoma might develop from the remaining ovary, quoted the statistics published by Olshausen's assistant, who had collected fifty cases in which ovariectomy was performed for the second time, where it had been noted at the first operation that the remaining ovaries were more or less cystic.

DR. MCLEAN asked if it was advisable to open the abdomen in the line of the old cicatrix.

DR. HUNTER said that there was always some risk in this, since intestine might be adherent at this point.

DRS. LEE and CHAMBERS had also noted the same tendency.

DR. THOMAS ADDIS EMMET contributed a paper entitled:

CONGENITAL ABSENCE OF THE VAGINA, WITH MENSTRUAL RETENTION,
AND THE HISTORY OF A CASE AFTER OPERATION.

I had the honor of reading a paper on this subject before this Society, June 19th, 1866, which was published in the *Richmond Medical Journal* the following August.

The object of the paper was to advocate the free opening of a passage to the uterus, the rapid emptying of the uterine cavity, and the washing out of the cavity with hot water immediately afterwards.

In the absence of any special literature on the subject, I treated my first case, early in 1863, by the above method, as it appeared to me to be based on sound principles, and I afterwards reported several cases where the best results had been obtained by it. Having had occasion, later, to look up the literature more thoroughly, I found but a few cases reported, and the accepted practice was then, as subsequently, to open the canal gradually, and to empty the uterus of its contents by means of the smallest trocar. All the operations instituted for the purpose of opening a vagina were extended over several days, and were employed chiefly for restoring a passage which had been accidentally closed.

At a later date, the gradual evacuation of the uterus was the only method advocated, and, as a rule, so serious were the results obtained that the attempt to form an artificial vagina was, to a great extent, abandoned.

Much ingenuity was displayed in devising means to tap the dilated portion of the vagina or the uterine cavity from the rectum, and to perform these operations without the admission of air.

In the London *Lancet*, of August 13th, 1831, I found a review of the first part of "Medico-Chirurgical Notes" by Mr. R. Fletcher. One of the cases cited was where an operation had been performed for forming an artificial vagina in a married woman, 22 years of age, who had never menstruated, and where sexual intercourse had taken place through the urethra. Mr. Fletcher stated that, after making some advance with the scalpel, and fearing to do more, he introduced a rectal bougie into the wound from

time to time, and opened a passage by the tap, or blow, of a mallet. I quote that: "In about a week, repetition of this practice of tapping succeeded in reaching what proved to be the uterus, which was perfectly formed and in a healthy condition."

I have called attention to the clinical fact that the uterus frequently does not develop, or menstruation come on, until a passage has been formed for the escape of the menstrual flow. In Mr. Fletcher's case, menstruation occurred for the first time shortly after making the artificial vagina, and at the last report the patient had already given birth to two children.

The means adopted by Mr. Fletcher were novel and efficient, but the whole operation could have been completed in nearly as few minutes as he occupied days.

Amussat reported, in the *Gazette Médicale de Paris*, 1835, an operation performed by him, in 1832, on a girl, about 15 years of age, who had had menstrual retention for over two years. In his description of the operation, he states that he abandoned the use of the knife after incising the outer tissues, through fear of making an opening into the bladder or rectum, and attempted to separate the tissues by means of his finger and nails.

After some progress had been made, the wound was stuffed with a sponge for three days, then the attempt was made again, and the cavity refilled with the sponge.

This operation was repeated three times and at the end of ten days the accumulation was reached and drawn off by means of a trocar and bistoury. The patient suffered from an attack of pelvic inflammation, confined, it was thought, chiefly to the Fallopian tube. The operation for relieving the retention had to be repeated four times before a canal remained sufficiently open for the free escape of the menstrual flow.

Until, by the report of a number of successful cases after the method I had adopted, I proved the fallacy of the belief, it was generally held that rupture of the distended tube was the great danger. It was supposed that the contents of the distended uterus would also dilate the tubes, and, if allowed to escape too rapidly, that contraction in the tubes would be excited, through sympathy, and, as their contents could not readily return into the uterine cavity, rupture would take place.

As this accident had been known to occur while the distended uterus was being evacuated of its contents after the accepted method, I became convinced that the only way in which the accident could be certainly avoided was by emptying the uterus as rapidly as possible, so that, if the tubes were distended, the fluid could escape into the uterus before contraction could be excited. I also established an important point in showing the necessity for completing the vaginal canal at the one operation. When this was done, the connective tissue of the pelvis could be easily separated, by means of the finger, to any extent, and the fear of

hemorrhage was but slight, as the blood-vessels were not ruptured.

If only a portion of the vagina was opened up, it would be found at the next attempt that the tissues had lost their elasticity, from circumscribed inflammatory action, and could no longer be separated readily.

Experience taught the fact that lacerated tissues in healing were less liable to contract, and a circular constriction, difficult to overcome, always marked the limit of the first operation and the beginning of the second. The thorough washing out of the uterine cavity with a stream of hot water not only hastened the exit of the thick menstrual blood, but it certainly lessened the risk of blood-poisoning, by removing the tenacious fluid which always smears the uterine walls, and the heat of the water excited prompt contraction afterwards.

To the present time, I have made but little alteration in the method of operating since that employed with my first case in 1863. The only difference has been in the employment of the carbolic-acid spray during the operation of opening the vagina, and in its use during the after-treatment, while the vaginal plug has been removed for the administration of the vaginal injections. While I am not a particular advocate of the general use of the carbolic-acid spray, it has seemed to me that there has been less vaginal discharge, and the raw surfaces have healed more quickly under its use.

It has been held by high authority that all efforts to keep open an artificial vagina have proved a failure. And yet I have from time to time placed on record a number of instances where the canal had remained open for years after the operation, and where the history of such cases was fully known to others. Moreover, the operation which I have adopted has certainly proved singularly free from danger and inflammatory complications. A number of deaths have been reported where a different plan of operating had been followed, and serious inflammatory complication of the pelvic tissues has been the rule.

I have thus prefaced the history of a case which I wish to present to the Society, one of particular interest from the length of time which has elapsed since the date of the operation. It is also the only instance under my observation when any serious pelvic inflammation followed the operation in an uncomplicated case, and, as an exception to the rule, its origin was clearly due to accidental causes. The case will also present features of interest to the obstetrician.

The early history of this case is fully recorded on page 205 of the third edition of my work on the "*Principles and Practice of Gynecology*." It is therefore only necessary for me to briefly state that at the Woman's Hospital, March 4th, 1876, I made an artificial vagina throughout in a girl about 15 years of age who had

never menstruated, but whose uterus was distended with menstrual blood. Shortly after the operation, she had a severe attack of pelvic peritonitis, with a pulse of 136 per minute and a temperature above 103°. During the progress of the case, it was necessary, for the comfort of the patient, to loosen the bandage so that the glass vaginal plug projected some distance from the canal, and, as a consequence, the upper portion of the vagina became narrowed. She was discharged from the hospital, June 20th, 1876. She reported in February, 1877, when she was in good health and menstruating regularly. The constricted portion of the canal remained unchanged, and she was instructed to return at some future time to have this difficulty overcome. But she neglected doing so, and for ten years I remained in ignorance of her condition.

It is but just to state that, from defective sewerage, the sanitary condition of the Woman's Hospital had become so bad that no operation has been performed in the building for several weeks previous to this one. The defect at the time of the operation was reported to have been remedied, but it was afterwards discovered that such was not the case, and this woman, as others had done, suffered in consequence.

In June, 1886, this patient consulted me, being then about three months advanced in her second pregnancy. She was desirous that she should take charge of her confinement, as her first child had been still-born after a labor of two days. She stated that, anticipating some difficulty, as she had married without having had the vagina properly opened, she had entered one of the public institutions of the city to be delivered. An attempt was made to dilate the constricted portion by means of Barnes' dilators, and every means was employed, as she was informed, to retard the progress of labor until the vagina had been fully dilated. She was of opinion that time had thus been lost and that her child had died in consequence. I did not feel satisfied that the band should offer any serious obstacle to her being delivered of a living child, for it was not a constriction proper with a defined and sharp border, but was more like a relaxed fold surrounding the vagina about half way between the cervix and the vaginal outlet. Dr. C. C. Lee saw the case with me and was of the opinion that it was only necessary to freely divide the band, when put on the stretch, for the labor to be terminated in a satisfactory manner.

Her labor began about midnight on November 23d last. The first stage was rather tedious, but soon after the escape of the liquor amnii the head advanced rapidly to the constricted portion. My assistant, Dr. Sherman Van Ness, had charge of the case and had been instructed by me to cut the band on each side as soon as the advancing head began to put it on the stretch. He did so by hooking his finger behind and drawing it toward the vaginal outlet, dividing it on each side of the rectum with a pair of curved scissors.

These two points were selected so that the tear, if extended, should not involve the rectum, but would extend laterally. They were made also at a point which would free the floor of the pelvis from traction, and this admitted of the ring being dilated to the greatest limit from the smallest extent of incision. There was no delay in the progress of the labor, and she was delivered in a few moments after the passage of this point of a living child, somewhat above the average size, and after an interval of nine hours from the time of the first pain.

She made an excellent recovery, and a remarkable feature in the case was the limited extent of incision which was necessary to admit of the free passage of the child. These surfaces promptly healed, leaving the vagina fully open, so that the constricted portion could only be detected by drawing the finger forward, so as to form a fold by the traction.

Notwithstanding the fact that the entire canal had been made, the surface of the vagina was soft and of a natural color. A mucous membrane seemed to have formed throughout, and I am satisfied that the most careful observer would have failed in detecting the fact that the canal was an artificial one.

DR. HUNTER was surprised to see by the tone of the paper that the writer assumed that the rapid method of evacuation was not universally practised at the present time.

DR. HARRISON thought that, if the obstruction was situated in the cervical canal, the contents of the uterus should not be withdrawn rapidly.

DR. LEE had seen two cases in which the immediate method was adopted successfully. He thought it was generally conceded that the chief danger from rapid evacuation lay in sudden contraction of the uterus, with consequent traction on, and laceration of adhesions.

DR. CHAMBERS had never seen any harm result from rapid emptying of the uterus.

DR. BALLS HEADLEY, of Melbourne, Australia (present by invitation), said that he had had several cases of retained menstrual blood, in which he had withdrawn the fluid at once. He thought that rupture of the tube from this cause must be rather a coincidence than a direct consequence. It was easier to keep the vagina open in cases in which a uterus existed. These artificial vaginæ presented no insurmountable difficulties during labor.

DR. HANKS thought it noteworthy that he had never seen a case of retained menstrual blood during eighteen years of private and public practice in New York.

THE PRESIDENT'S experience had been similar. He had seen a well-developed girl of twenty-one having no vagina. After dividing the tissues between the rectum and bladder to the depth of three inches, he came upon a small sac about an inch in length, containing a drachm of thick cervical mucus. This was all that there was of the uterus. No ovaries could be detected, and the girl had never menstruated since the operation.

DR. NILSEN cited a case in which he had gradually removed a large quantity of retained menstrual blood. During the first two

days he withdrew a little with the aspirator, but the fluid became so offensive that on the third day he made an incision and evacuated it entirely. The patient had septicemia, but recovered.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, September 1st, 1887.

The President, THOS. M. DRYSDALE, M.D., in the Chair.

PLACENTA PREVIA CENTRALIS.

DR. ROBT. H. HAMILL presented the specimens and related the history of the case. I was called, August 13th, to see Mrs. W., aged 40 years, mother of three children, and now in the seventh month of gestation. During the first and second months she had a slight "show" on three or four different occasions. She then saw nothing until the middle of the sixth month, when she had quite a "gush of blood" during the night, without any pain whatever. She did not consult a physician at this time, as she attributed the hemorrhage to having worked somewhat harder than usual during the preceding day.

Four weeks afterward, which was in the seventh month, she had a repetition of the hemorrhage, losing a much larger quantity. She became quite alarmed and sent for me. The hemorrhage had entirely ceased before my arrival. I made a vaginal examination and found the external os patulous and the internal rigid. A slight discharge of blood continuing, I requested Dr. B. C. Hirst to see the case with me, to consider the question of inducing labor. We found the patient having a copious flow of blood. The os was slightly dilated and was completely covered by the placenta. The woman had no pain, but was becoming faint from loss of blood. We decided to bring on labor at once. The patient was etherized, the os dilated, and three fingers passed through the substance of the placenta and found the fetus lying across the transverse axis of the brim of the pelvis. I succeeded in bringing down one foot and proceeded to deliver. There was no difficulty until the head became engaged, and it was with the greatest effort that we were able to extract it. The child was still-born, owing to the length of time we were in extracting the head. We then delivered the placenta with ease. The uterus at once became firm and hard.

The points of interest in this case were to me: 1st, the central implantation of the placenta. 2d, the fact that the hemorrhage

began so early in pregnancy. 3d. the difficulty in delivering the head, which I think was due to the placenta so filling up the pelvis that the diameters were so reduced as to materially retard the delivery of the head.

DR. LONGAKER remarked that the most favorable statistics show from forty to forty-five per cent of children saved. Hemorrhage early in the pregnancy usually indicates a central implantation of the placenta, and labor should be induced early in such cases. Immediate delivery by traction on the leg is to be condemned. The breech is a perfect tampon, and after one leg is brought through the placenta, the case may be left to nature. The hand should not be passed into the uterus, but the placenta should be perforated by one or two fingers and bipolar version effected. If traction on the leg and rapid delivery be effected, a bad presentation of the head at the superior strait will result, and the cervix will not be sufficiently dilated by the body to allow the head to pass quickly, and the child becomes asphyxiated. The average result of rapid delivery is unfavorable. The maternal mortality is from ten to forty per cent.

DR. HAMILL did not think the delivery in his case too rapid; traction on the leg was made because nature was exhausted and was not able to deliver the child without assistance.

DR. B. C. HIRST read a paper entitled a

CONTRIBUTION TO THE STUDY OF DIFFUSE HYPERPLASTIC INFLAMMATION OF THE DECIDUAL ENDOMETRIUM,

which will be published, with illustrations, in this JOURNAL.

ACUTE PNEUMONIA IN UTERO.

DR. B. C. HIRST exhibited the specimens, and remarked that pneumonia during intrauterine life is rare, but it has been observed. Dr. Strachan, of Australia, *Br. Med. Jour.*, 1886, II., p. 860, has reported a case, and Dr. Geyl, of Germany, *Arch. f. Gynäk.*, Bd. XV., S. 384, has collected three others. Geyl's explanation is undoubtedly the correct one for this occurrence. If the fetal blood is not properly aërated, the respiratory centre in the brain is stimulated to action by the excess of carbonic acid gas in the blood, and the fetus makes inspiratory efforts, drawing into its lungs amniotic fluid, containing in these cases, possibly, meconium, and a catarrhal pneumonia is the result, ending usually in the death of the fetus, either in utero or shortly after birth. These cases are to be distinguished from those in which the fetus draws into its lungs amniotic fluid, mucus, and blood during labor. The specimen which I exhibit to the Society has the following history: These lungs were taken from an infant which died twenty-two hours after birth, having been cyanosed from the first. The mother had had a large lumbar abscess for the past year, and when she came under my observation in

the Philadelphia Hospital, in the sixth month of pregnancy, exhibited all the signs of general septicemia. She gave birth to her child at the seventh month of gestation. The post-mortem examination of the infant showed no other cause for death except the pneumonia involving both lungs, which must have arisen in utero, as the labor was easy and rapid, and there was no reason to believe that the child made inspiratory efforts during its expulsion. The microscopic slides which are exhibited confirm the diagnosis. They show well-marked catarrhal pneumonia.

DR. HIRST also exhibited an

ECTRO-MELIC MONSTER.

This fetus, expelled in the fifth month, presents, if one adheres strictly to the classification of Geoff. St. Hilaire, only a deformity by numerical diminution, consisting in the absence of the left femur and four toes of the left foot. Its appearance, however, is certainly monstrous, and I have ventured to classify it among the ectro-melic monsters (ectro-melic-aborted limb).

DR. J. C. DACOSTA narrated a case of

RAPID DEVELOPMENT OF A FIBRO-SARCOMA OF THE UTERUS.

The patient came under his care three years ago for a catarrhal metritis, the uterus being sharply retroflexed, and the posterior wall being bulged as if an interstitial fibroid were present. These conditions were all cured by the use of sponge tents. About the middle of last May, she was attacked with a profuse metrorrhagia lasting ten or twelve days; fungous vegetations were removed by means of the curette. The June period occurred normally on the 22d, but a recurrence of the bulging in the posterior wall was noticed. She went to the sea-shore, but returned on July 22d, worn out, thin, and with white, anemic lips. She had had a sanious discharge from the vagina for the last twelve days. Her condition had been diagnosticated at the shore as "fibroid and ulcerated cervix." The os was as large as a five-cent nickel. The cervix was filled with a pultaceous mass which was extruded by the free use of ergot. On July 25th, Dr. DaCosta removed from the body of the uterus a tumor three inches long by two inches thick, a fibro-sarcoma which had grown inside of thirty days. The patient recovered rapidly.

DR. DRYSDALE thought this very rapid. These tumors were likely to recur.

DR. JOSEPH PRICE exhibited a specimen of

ABSCESS OF BOTH OVARIES.

In his experience it has been a common condition. He has operated in four such cases within three months. This case had escaped unoperated upon from Birmingham. Pus was present

in both tubes. The operation was a complete enucleation without ligatures.

DR. PRICE exhibited a "cotton rope" or wick which he used in drainage tube; it becomes filled with blood, serum, etc., and is replaced with a clean one two or three times a day. It keeps the openings clear and favors discharge of fluids.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, April 1st, 1887.

DR. A. F. A. KING, *President, in the Chair.*

DR. THOMAS E. McARDLE read a paper entitled :

"PRIMARY PERINEORRHAPHY."

The doctor said that he was aware that the usual term was "immediate perineorrhaphy," but as he had defined what he meant by "primary," he thought the title legitimate.

DR. G. W. JOHNSTON opened the discussion. Dr. McArdle is to be congratulated upon his forethought in the selection of a subject for his paper of such interest to the members of this Society, as well as upon his able manner of treating it. Many themes for discussion are proposed from time to time, which draw forth opinions, valuable it may be, but which are rather founded upon theoretical reasoning than practical observation, and, however great their intrinsic worth, do not materially add to the sum of medical knowledge. The injuries that women suffer in childbirth and their proper mode of treatment are questions of immediate and practical interest to every member of the profession, for every one has seen, no doubt, either in his own obstetrical practice or in that of others, a large number and variety of these lesions, and has more than once been confronted with the problem that Dr. McA. has called our attention to to-night. The fruits of individual study will therefore lend value to the discussion which the author of the paper on Primary Perineorrhaphy has modestly informed us his work was intended to call forth.

Dr. McA. has divided laceration of the perineum into, 1st. Central ruptures; 2d, lacerations beginning at the posterior commissure of the vulva and involving more or less of the perineal body anterior to the sphincter ani; and 3d, lacerations involving the sphincter ani, and a part perhaps of the recto-vaginal septum.

¹ See original articles in this number.

This classification is a good one and includes all the varieties of tear that are apparent, on superficial examination, to the accoucheur, and for which the primary operation, adopting Dr. McA.'s interpretation of these words, is usually undertaken.

There are other injuries occurring in this region, along with or independently of them, which find no place in this generally accepted classification. We refer to transverse lacerations above or at the vaginal outlet, separation or laceration of the fibres of the levator ani muscle, or the tearing away of this muscle from its bony attachments; and finally a separation of the vagina from its fascial attachments. When after labor there is an outward visible tear of any part of the superficial portion of the perineal body—however slight in extent—an immediate operation is usually performed, with the following objects in view: 1st, the closure of the wound, simply because it is a wound; 2d, the obliteration of one source of septic infection; and 3d, the prevention of subsequent prolapse of the vaginal wall and uterus. These are certainly commendable objects.

Central lacerations are very infrequent and need not be dwelt upon. Lacerations through the sphincter ani, and a part perhaps of the recto-vaginal wall, must be considered as quite separate and distinct lesions, requiring special treatment. In this condition, the immediate operation is indicated, for there is no other injury or diseased condition of the female genitalia which, without causing actual pain, can give rise to more misery and unhappiness. Even if the operation fails, as it is likely to do, future repair is not made impossible, although the operation may be made more difficult. All the other lacerations of the perineum which are recognized immediately after labor by the obstetrician, and for the relief of which primary perineorrhaphy is usually performed, consist simply of lacerations of the superficial tissues of the perineal body without involvement of the sphincter ani. Of course, such lacerations—viewing them as wounds simply—may be closed by suture as one would close a recent wound in the scalp or any other part of the body. I use the word "may" advisedly, for there is no reason why the operation *should* be performed. It is true that the patient and accoucheur may both be wearied, that the light is bad, that there is lack of assistance, and that the proper instruments may not be at hand; but the operation as usually performed is one requiring little skill, the danger of shock, spoken of by the author of the evening, is somewhat problematical, and the effectiveness of cocaine makes the use of ether or chloroform, if the patient is not already narcotized, entirely superfluous.

I say the primary operation in this the usual form of laceration *may* be performed, but I believe it to be wholly unnecessary.

Why introduce sutures when rest, position, and cleanliness are sufficient in many cases, so great is the vascularity of the part, to secure the proper coaptation and union of the divided edges? Place a woman upon the back and see what forced and unnatural separation of the legs is necessary to produce any gaping at the vulvar fissure. There is, furthermore, in aseptic labors and puerperia, if I may use the words, no danger of septic infection at this point, particularly if the antiseptic vulvar pad is used, nor need the fact of the lochia coming in contact with the fresh wound be the source of any anxiety. If the puerperal discharge is normal,

it cannot interfere with the healing of the wound; if it is not, trouble exists higher up in the genital tract, in the treatment of which the perineal wound is cleansed and kept clean.

It should be remembered that the wound of the perineal body is not always a simple lacerated wound; it may be so when the last part of the delivery is rapidly accomplished, and the perineum be torn by the head or shoulders of the child; indeed, it may even bear the character of an incised wound when the forceps at this time are incautiously employed. But often another element is added—an element of contusion, when prolonged pressure of the child's head within is supplemented by misdirected efforts at perineal support from without. Under these circumstances it is best, after cleansing the area of injury, to leave it alone, for the constriction of introduced sutures would retard rather than expedite healing.

The main object for which primary perineorrhaphy is performed is to obviate the danger of subsequent descent of the vaginal wall and uterus.

Now, my firm convictions in regard to all these matters—convictions which, so far as I am personally concerned, receive daily confirmation as my opportunities for clinical observation increase, and which are shared, I believe, by many here present, whose opportunities have been greater than my own, and who could phrase them much better than I can hope to do—may be briefly summarized as follows:

1st. That in the vast majority of cases the lesions that are recognized after childbirth, and for which primary perineorrhaphy is performed, consist in solutions of continuity, varying in degree, of the superficial or skin portion of the perineal body.

2d. That these tears do not in any way of themselves lead to prolapse of the vagina or uterus, for the womb is swung from above, not supported by the perineum from below; therefore no one can say in an individual case that because he sewed up the tear the woman had no prolapse.

3d. That the symptoms usually attributed to loss of the perineum from which women with this injury suffer bear no relation whatever to the extent of the injury. Women who work hard standing and lifting may be unconscious for years of the existence of an extensive injury of the perineum.

4th. That after the laceration has been left to heal of its own accord, no inconvenience is experienced in the future, except, rarely, reflex disturbances emanating from the cicatrix.

5th. That since these lacerations of themselves cause no immediate danger or subsequent inconvenience, there is no necessity for sewing them up just after labor, or indeed at any future time.

6th. That the parturient lesions elsewhere in the pelvis, which may and repeatedly do occur independently of lacerations of the perineum, are the sole cause of later trouble.

7th. That of these lesions those most potent to cause ultimate trouble occur, many of them, before the child's head reaches the perineum.

8th. That they may and repeatedly do occur without any subsequent implication of the perineum.

9th. That they may and repeatedly do occur without any external lesion at all, and are subcutaneous, or rather submucous, wounds.

10th. That they can be recognized only very rarely immediately after labor, and then on the most careful examination and with the greatest difficulty.

11th. Finally that the operation of primary perineorrhaphy, as commonly performed, does not reach these lesions if they exist, nor benefit in the slightest degree the condition of the patient.

The injuries to which I have referred are those found at the vaginal outlet or above, and in the fascia supporting the vagina, made familiar to us by Emmet, and the lesions of the levator ani muscle described by Schatz and Hadra. It is unnecessary to refer except by name to these injuries, for all are familiar with them both through the descriptions of those who first called attention to them and from personal observation. They are not lacerations of the perineum, and a discussion of them would be beyond the limits of the present discussion. In conclusion, however, it may be said that it is in consequence of these that we find relaxation and prolapse; that their recognition immediately after labor is very difficult, often impossible when all the tissues of the parturient canal are lax and yielding; and although it is agreed that immediate operation is in such cases most desirable, yet the greatest difficulty attends its performance.

To repeat: lacerations of the perineum involving the sphincter ani or the sphincter ani plus the recto-vaginal wall should be immediately closed; while all other lacerations or incised or contused wounds of the perineum which accompany as a rule the act of parturition may be closed, but cause no trouble if left alone. Their immediate closure effects nothing.

Again let me express to Dr. McA. my thanks for his interesting paper.

DR. H. D. FRY is in favor of primary perineorrhaphy, although it has not been his experience to find that the parts about the vagina are particularly dulled as regards pain immediately after childbirth; he did not consider that sufficient reason to postpone the operation. It may be, as Dr. Johnston says, that the majority of tears are superficial, but it is probable that, in nearly every case, some few, at least, muscular fibres are torn, and in later life the effects of this are shown. An open wound is also a possible source of septicemia, and for this reason, if for no other, sutures are indicated.

He agrees with Emmet that the perineum does not support the uterus, but if it has been torn and not sewed up, involution of the vagina is prevented, and this is the cause of prolapsus uteri in later life.

In his experience, deep stitches have been successful nine out of ten times. It is true that union can be obtained without suturing, but it is slow, imperfect, and all the time the woman is exposed to sepsis.

DR. D. W. PRENTISS was surprised at the conservatism expressed by the first two gentlemen speaking.

He thought that the tendency was rather to do an operation on any occasion when the slightest opportunity offered. He supposed that the question of "primary" or "secondary" perineorrhaphy had been settled long ago in favor of immediate suturing. This has been his practice for years. Nor has his opinion been changed by what has been said so far to-night. The only reason that has been brought up against it is that it causes

pain, and this reason has been militated by the declaration of one of the gentlemen that the condition of the parts after labor is one of more or less analgesia. On this point his experience bears out the assertion. The reader has not so much given reasons why it should not be done early as he has why it should be done late.

If the perineum is ruptured and it is let alone, there is certainly a deformity, although there may be no support taken from the uterus.

He agrees with Dr. Fry that restoration of the perineum favors involution of the vagina, and lessens the chance of septicemia.

If the surfaces are not sutured, the lochia will find its way between them and prevent primary union, and he does not see how first intention can obtain when the only treatment is to tie the knees together.

There is at least one condition to which primary perineorrhaphy is not applicable, and that is when there is a likelihood of loss of tissue by sloughing after a tedious labor.

He has had one such case in which, at defecation on the tenth day after a long labor, a large slough came away.

As has been stated, ruptures are easily overlooked. He, on one occasion, had his hand on the perineum when the head passed over it, and he was sure that no rupture had taken place. Subsequent examination, however, proved that a large tear had occurred.

If he understands the reader to advocate only late perineorrhaphy, he must enter his protest. Immediate suturing, if it does no good, certainly does no harm, but, in his mind, there is no doubt of its efficacy.

There need be no excuse that instruments were not handy, for it can be done with a darning needle and sewing silk procured in the house.

He has himself done it in this manner, and has never failed to get union by first intention.

DR. DAWSON, of New York, said that there was still one point which had not been discussed, but which had a deep bearing on the wherefores and whys. He believes in immediate restoration of the perineum, but there is still a wide diversity of opinion as to how the operation should be done, and a great misconception as to what constitutes a restored perineum. He has seen all the best men in this country and Europe operate, and each operation was totally different from the others.

We have all seen a beautifully coapted perineum fail of primary union because too much was done, because too many and too tight sutures were put in. These stop circulation, cause edema and sloughing of the parts.

If there is no other reason, however, for primary perineorrhaphy, the lessened chances for septicemia warrant its performance.

There was once an epidemic of puerperal fever in a lying-in hospital in New York during the service of his predecessor, who did not believe in immediate suturing of ruptured perineums.

When he (Dawson) went on duty, he had every wound closed, but with as few stitches as possible. He had no losses from puerperal fever, because he had removed one of the broadest

avenues of infection. In these operations the wounds were cleansed and coapted, but not *tied* together.

He takes a few deep, well-planted sutures, but does not tie them tightly. Even in his secondary operations he uses but two or three or at most four sutures, and he has not seen a failure in many years.

He cannot agree with those who consider a laceration of any degree as of no importance.

But while he advocates closing every wound, it must be done with care, and he has frequently seen operations that might be said to have done more harm than good, as the stitches were not placed with discretion.

DR. G. W. JOHNSTON said that he was told by a physician that he had obtained a good result on doing the operation thirty-six hours after labor. What is Dr. McArdle's limit of time?

DR. MCARDLE replied that, personally, he preferred doing it in the first half-hour, if at all, but from the observations of others, six hours afterwards would not be too late. He would never do it after twenty-four hours had elapsed.

DR. J. FORD THOMPSON agreed with Dr. Prentiss that no good argument had as yet been advanced why primary perineorrhaphy should not be done.

It has always been his practice to do it in the first three hours if possible. He has refused to operate after ten hours have elapsed.

The idea expressed by the reader that primary union can be obtained by simply holding the parts in apposition and keeping them quiet is not in accordance with surgical experience, and if this can be done in the first place, why are not late restorations allowed to heal in the same way? It would certainly save trouble. Nature never makes a perfect job of a surgical injury.

As for failures, it is only necessary to examine cases for other causes to find how frequently immediate perineorrhaphy was unsuccessful. Time and again he has found a ruptured perineum in old women who have come to consult him about some other trouble in the genital tract. Ruptures should be treated as any other wound of a like character, and if properly sutured, success is almost certain.

Usually nothing more than the skin is stitched and the torn mucous membrane is left, which accounts partly for the number of failures.

Most women will permit an operation immediately after labor, who from modesty, fear of pain, etc., would not allow of a late restoration. Some women, for these very reasons, have been invalids for years, when it is probable that even an imperfect operation after the labor would have made them comfortable.

It is true, a general surgeon judges of the aspects of the case from his methods of treatment of other wounds of a like character.

When it is proved that the majority of primary restorations of the perineum are failures, then it will be time to stop the procedure, but from his own and others' experience, even in the worst cases, he is not yet inclined to give up immediate perineorrhaphy.

DR. S. C. BUSEY expressed himself in favor of immediate perineorrhaphy. No doubt, there are some cases which will heal nicely with only the posture treatment. When he first began practice he tried this, but he never saw even the best result equal those obtained by the primary operation.

It has, for some years, been his practice to operate when necessary before leaving the house of his patient.

Dr. McArdle objects to the primary operation, because it becomes necessary to continue the narcosis during the operation, and hence increase the liability of hemorrhage. For his part, he does not believe that narcosis is conducive of post-partum hemorrhage, and, besides, it has never been his practice to operate until the patient has recovered from the anesthetic, and he never observed that there was much pain nor had he ever found an objection to the primary operation. Nor does he believe either that the "shock" of the operation will cause post-partum hemorrhage.

He emphatically protests against the teachings of the paper and the opening address. It is true there may be cases in which immediate operation is contra-indicated, and in his opinion the operation should be done soon after the completion of delivery. He desired it to be understood that when he says perineum he means perineum and not a tear in the fourchette, for which he would not operate.

DR. D. W. PRENTISS said that in one case he had operated fifteen hours after delivery and had obtained primary union. The physician in attendance recognized the tear and necessity of closing it, but he was attending a case of erysipelas and did not dare to operate. In the afternoon of the day of delivery he was sent for and performed the operation.

DR. G. N. ACKER was glad to hear that Drs. Busey and Prentiss had always had such phenomenal good luck. He is himself in favor of the primary operation and always recommends it, but the difficulties of the operation are sometimes very great, there being often a lack of assistants, a poor light, etc. He has not himself had very good results from the operation, especially in deep ruptures, for he could not get the sutures to hold.

If the tear is a clean one, good results ought to be obtained, but if it is a lacerated one, it becomes necessary to pare the jagged edges before we can expect much.

DR. FRY hopes that the gentlemen will not be deterred from operating even up to twenty-four hours after labor. He has had several successful cases after fifteen hours had elapsed, and the experience of others proves the same thing. One writer says that, owing to the edema of the parts just after labor, the stitches of an immediate operation are apt to become loose. It is, consequently, his habit to wait a few hours before operating.

The first time he ever heard of Dr. McArdle's disbelief in immediate perineorrhaphy was just after Dr. M., at his request, attended a labor for him. Dr. M. reported a rupture of the perineum which he had not sutured. Together they went there about fifteen hours after a labor, performed the operation, and good sound union even of the muscular fibres was obtained.

DR. G. W. JOHNSTON asked the gentlemen who had such success with the primary operation if there had ever been a subsequent prolapse of the vagina or uterus.

DR. MCARDLE, in closing, expressed his indebtedness to Dr. Johnston for the able manner in which he had supported him in his opinion.

Of course, Dr. Fry is in favor of the primary operation, as he has always been successful with it. His average of nine-tenths is certainly a good one.

The only case of puerperal fever that he has ever attended was in a woman whose perineum had been sewed up just after her labor, so it would seem that suturing does not always prevent that disease, nor is non-restoration of the perineum always the cause of subinvolution of the vagina, for he has seen that where there was no rupture. It sometimes happens that a pocket is formed by the suturing, and in this the lochia and urine collect and ferment and cause septicemia, but he fails to see how urine passing over a tear should prevent healing any more than it does in a lithotomy wound.

In the case mentioned by Dr. Prentiss, of unexpected rupture of the perineum, it is probable that the shoulders opened the breach, or, as Dr. Busey once told him, the nose will sometimes do it.

The cause of the epidemic of puerperal fever, mentioned by Dr. Dawson, might have been due to the infection conveyed by his predecessor—an accident that we all know will sometimes occur.

Thus the removal of the cause may have stopped the epidemic rather than the closure of the wound.

He thinks that keeping the knees together should be as effective as mild suturing.

Drs. Thompson and Busey have certainly had good luck in their results, but so have Tarnier and Hugier in the same class of cases without resort to surgical procedures.

Dr. McArdle quoted from Dr. Fordyce Barker's remarks on Dr. Lee's paper, "Future Influence of Surgery upon Obstetric Art," to prove that shock may be the cause of post-partum hemorrhage.

DR. BUSEY said that if Dr. M. would yield the floor a minute he would state that he heard Dr. Barker make the remarks quoted from in which he referred to two cases of post-partum hemorrhage that he thought were due to the shock of suturing. He did not agree with him, and thought other conditions were causative.

Stated Meeting, April 15th, 1887.

DR. A. F. A. KING, *President, in the Chair.*

DR. H. M. CUTTS read the essay of the evening,

"THE VALUE OF THE GENU-PECTORAL POSITION IN DIFFICULT VERSION."¹

DR. FRY, in opening the discussion, said that, as he had had no practical experience with this posture in cases of difficult version, he was forced to speak from a theoretical standpoint. He thought Dr. Cutts' paper one of the most important that had been read in the Society. We are too conservative in this country in the use of the dorsal position in obstetrical procedures. In England, version is performed in the left lateral position, but upon the continent the knee-elbow position is also employed. In France, the dorsal position with the hips so raised that the vulva is entirely free from the bed is frequently used. We rarely think of the genu-pectoral position except in gynecological procedures.

¹ See original articles in this number.

but it has been used in cases of prolapsed funis, and in liberating an incarceration of the retroverted pregnant uterus. Dr. Mattei, of France, in 1863, recommended this position in certain cases of albuminuria gravidarum, with the idea of relieving the congestion of the pelvic region. Dr. Fry did not agree with Dr. Cutts that the atmospheric pressure on the fundus uteri played a very important part, for he thought that the opposing force was intra-abdominal, and this Dr. Cutts admits in what he calls "help" No. 5, which militates against his first assertion that the admission of air into the vagina in part equalizes the atmospheric pressure on the fundus. He grants that the pressure of the abdominal organs is removed by the genu-pectoral position. He doubted if the fetus was drawn from the uterine neck as Dr. Cutts believes, but thought the uterus with its contents gravitated away from the pelvis, the woman not being able to press with the diaphragm and abdominal muscles upon the fundus. Neither could he agree in regard to the retention of liquor amnii; on the contrary, it seemed to him, as the presenting part could no longer act as a stopper, the intrauterine pressure would tend to force the waters out more readily than before. He considered that the most important point suggested by the essayist, and the key to all the good attributable to the genu-pectoral position, was that it lessened the physiological contractions of the uterus, and the reason for this was the absence of pressure by the presenting part upon the circular fibres of the neck of the uterus which ordinarily cause those contractions by reflex action. Whether this loss of contraction would be sufficient to enable the operator to dispense with anesthesia is a very important question, but he believed that it would not often be the case, for the introduction of the hand is painful. The chief disadvantage would then be the difficulty of using anesthesia because a great number of assistants would be required in order to hold the patient in proper position. In describing those cases of version where, after other methods had failed, version was successful in the genu-pectoral position, the essayist had omitted to mention whether anesthesia had been employed. If it had, it might claim the credit for the success as well as the posture, for it is a common experience to be able to turn during anesthesia where before it had been impossible. He did not believe the genu-pectoral position would be of much value in O. P. positions because Nature, as a rule, rectifies them, and it would be hardly justifiable to push the head out of the pelvis after it had reached the perineum.

He thought this posture might be a useful expedient in cases of impaction and that it might be employed in bipolar and external version.

DR. KING believed that this posture would certainly be better than forcibly pushing up an impacted head.

DR. CUTTS, in closing, said that he could not see how the statement that the genu-pectoral position relieved the uterus of the "superimposed weight of the abdominal viscera" interfered in any way with the statement that the admission of air into the vagina equalizes, in part, the atmospheric pressure upon the fundus uteri.

Pressure from both was present at the same time, and he thought it probable that the atmospheric pressure on the prominent abdomen was even greater than the weight of the viscera.

The statement in "help" No. 6 is that "the liquor amnii is much more likely to be retained *until we accomplish the version.*" This seems likely, even though the presenting part be pushed up, because of the angle with the bed at which the uterus is, because the vagina is elongated, and because the compressing force of the abdominal muscles and uterus is diminished. With the woman on her back, just as soon as the impacted presenting part, which has been acting as a plug to the waters, is pushed up, the liquor amnii has every chance to escape, and version is made more difficult.

It is true that, with the woman anesthetized, the position is a difficult one to maintain, but it can be done if only partial anesthesia is produced, and by the help of a chair turned on its back in the bed. Surgical anesthesia does not seem to be required. In fact, in only *two* of the seventeen cases reported is it distinctly stated that any anesthetic was used at all. In *three* it is clearly stated that no chloroform was used, and to these we, of course, add the two cases of Smellie, which leaves ten cases about which there may be some doubt as to whether an anesthetic was used or not. No observer reports much suffering by the patient, the only remark upon this being in Case 5, in which no anesthetic was used, where the attendant says there was "not much suffering by the mother." It would seem, therefore, that anesthesia is not a "*sine qua non.*" The whole version takes but three to five minutes.

The position failed to bring relief in two cases, once because of the weariness of the operator and the fractiousness of the woman, and the other after much previous manipulation and the exhibition of ergot.

Dr. Cutts thinks that the semiprone or the dorsal or lateral positions may to some extent answer for the genu-pectoral position, but they never can take the place of it in difficult version because the angle of 45° in the genu-pectoral posture affords the greatest advantage to work upon. Even if the hips, in the dorsal decubitus, were raised until the spine was on an angle of 45° with the bed, we would not get as complete relaxation of the abdominal muscles as in the other position.

It is perfectly true, as Dr. Fry says, that occipito-posterior positions will usually correct themselves; but as the position is generally due to a large head or a small pelvis, the agony of the mother during the rotation of the head, the exhaustion caused by the delay, and finally the damage which might be done by the possible necessity of forceps, can all be partially obviated, at least, by a very simple and, so far as we know, harmless procedure as soon as we have made out the malposition and the first stage of labor is over.

External manipulation alone might certainly be tried, as Dr. Fry suggests. Maxson remarks that this, with the position, is sufficient to accomplish version. Indeed, in the occipito-posterior positions, Dr. C. thinks that if the impaction of the head was relieved, and there was considerable liquor amnii, the back of the fetus would of itself gravitate towards the inverted abdominal walls, and the occiput would thus come under the symphysis.

Dr. Fry apparently contradicts himself when he says that "he doubts if the fetus was drawn from the uterine neck, but thought that the whole uterus with its contents gravitated away from the

pelvis," and then says, "the reason for the lessened physiological contractions of the uterus is probably due to the absence of the pressure of the presenting part upon the circular fibres of the neck of the uterus, which usually causes those contractions." It would seem to be true that if the uterus and contents gravitated "en masse," the head would still be pressed against the neck. It is probably due to the fact that the fetus did gravitate away from the neck, and thus relieve pressure upon it, that the "inertia uteri" was caused in Cases 15, 16, and 17.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, July 15th, 1887.

The President, CHARLES WARRINGTON EARLE, M.D., in the Chair.

DR. W. W. JAGGARD exhibited

AN INTACT OVUM, CORRESPONDING TO THE FIFTH MONTH OF PREGNANCY.

The specimen was interesting on account of its unbroken state, and because it suggested a topic of importance from a medico-legal point of view. It is an unusual, but not a phenomenal, occurrence, for the egg to pass out per vaginam in an unbroken state at this stage of gestation. Cases, however, are recorded, in which the fecundated ovum has been expelled through the parturient canal in an intact condition, at term.

The matter of chief interest in connection with the case was, whether the abortion was artificially induced, or occurred as the result of the operation of natural causes. The abortion occurred in a hospital in this city, some suspicion attached to one of the internals, and the specimen was referred to Dr. Jaggard for an opinion. The intact condition of the egg, and the structural changes in the placenta and decidua, not of recent date, rendered it exceedingly improbable that pregnancy was interrupted by any recent operative interference. He desired to exhibit the ovum to the Society, before destroying the specimen in the further examination.

DR. EDWARD B. WESTON presented

THE SPECIMENS FROM A CASE OF HYSTERECTOMY FOR CANCER OF THE VAGINAL PORTION.

The uterus and ovaries, which I present, were removed on the 20th of March, with the assistance of Drs. Etheridge, Parkes, and others. I saw the patient early in the winter, and found a

growth on the anterior lip of the cervix about as large as half an English walnut. The surface was not broken at all. There was no offensive discharge, although she had had for a month or two more or less pain and a general backache and leucorrhea. I had a piece of this growth examined by a microscopist and he pronounced it malignant. Afterwards she came into my office, and Dr. Etheridge examined her carefully. The growth did not seem to have extended beyond the neck of the organ, the body to all appearances was not involved. She was advised to have the whole organ removed, and had explained to her the probable or possible advantages and the dangers. She and her husband elected the operation. The uterus was removed per vaginam without any accident, and with very slight hemorrhage. The woman rallied from the operation without much shock, but in a couple of days the temperature began to go up, and on the sixth day she died of septic peritonitis.

POSTERIOR LIP OF THE VAGINAL PORTION.

I have another little specimen here, a piece of the posterior lip of the cervix, removed from a woman about six months pregnant. I was called to see the case last Tuesday, and found it to be a case of puerperal mania. On that morning, she had been suddenly taken with the idea that unless she produced a miscarriage, unless she got rid of what was in her, her seven children would die. She first took a carving knife—she tells this story—and intended to perform Cesarean section on herself, but changed her mind and with her own fingers she got into the vagina and got a firm enough grasp on the posterior lip of the cervix to tear off a piece about as large as the thumb, and when I saw her it was hanging by a shred. No abortion or premature labor was induced, although she had bled quite profusely from the wound she had inflicted. Last evening, Dr. Etheridge saw the case with me, and we cut the hanging shred off.

DR. BYFORD.—Will you tell us what kind of operation you performed in removing the uterus, whether with clamps or ligatures?

DR. WESTON.—The uterus was drawn down, the vagina separated, and the uterus retroverted. Long dressing forceps were applied to the vessels on either side, then the ligatures were passed through and tied double, but before we tied them we released the forceps, which were used as clamps.

The Secretary read an inaugural thesis, by JUNIUS C. HOAG, M.D., Chicago, entitled,

THE IMPORTANCE OF ABDOMINAL PALPATION IN OBSTETRICAL DIAGNOSIS.¹

DR. F. E. WAXHAM.—External palpation has always been rather unsatisfactory to me. I presume it is simply because I have not

¹ [The substance of this paper is fully contained in a series of articles by Dr. Paul F. Mundé, published in this JOURNAL for July and October, 1879, and April, 1880 (pp. 114), to which the reader is referred.—Ed.]

had the long-continued practice that is necessary to make one skilful. While ordinarily it is possible for me to detect an oblique position of the child by external manipulation, yet I am free to confess that I have never been able to make a positive diagnosis as to the position of the head and breech. This is well illustrated by a case I had not long ago. By internal and external examination it was very evident that I had a cross presentation, and yet it was impossible for me to say positively where the head and where the breech was situated. I called upon Dr. Jaggard, who has had a great deal of experience in this matter, and he was able to state definitely the position of the breech, and the course of the labor justified the diagnosis.

DR. HENRY T. BYFORD.—I have only words of commendation for the paper. It is somewhat surprising, with our present knowledge of puerperal fever, that members of the profession will still follow the bad practice of poking their infected fingers about in the cervix after a fontanelle, and then rubbing about after the sutures. It is not only the most dangerous, but the most difficult method of diagnosis. If properly studied, abdominal palpation is more easily learned. When simple abdominal palpation is not satisfactory, bimanual palpation from the vagina is a valuable method even before the cervix has commenced to dilate. With the fingers of one hand over the symphysis, and those of the other under, a large portion of the circumference of the fetal head can be grasped and outlined. When the head lies directly across the pelvis, both sides will be about the same, or one a little lower than the other, and a triangular space between the pubes and side of the head. When the occiput is normally located, the subocciput will be felt over the pubes and to one side, while the occiput and top of the head as felt from the vagina extend diagonally down into the pelvis toward the other side. When the face is anterior, the facial irregularities may be discovered from above in place of the round hard subocciput, and from below the head extending back across to the other side. When the general contour of the head has been made out or even before this, a fontanelle can usually be felt through the attenuated cervical walls without difficulty. The breech is known by the way it fills the pelvic brim; in face presentations the head is higher in the pelvis, etc. I think that there is no doubt but puerperal septicemia may and does occur when all antiseptic precautions are taken, but in normal labor such is the great exception. The old-fashioned methods of management are more often at fault.

DR. H. P. MERIMAN.—The paper seems very excellent and very modest. We ought to use and familiarize ourselves with the method sufficiently to gain the touch, the learned touch, which will enable us to recognize what we need to know without the introduction of the finger into the vagina. As to the question of sepsis, which is referred to in the paper and discussed slightly, I think it is something that is worthy of a great deal more discussion than we have yet given it. As to the introduction of sepsis by the attending physician, and as to methods of prevention, the cases of child-bed fever that the majority of us have, are not always among the patients where we would naturally expect that such a thing should take place—among the careless and the slovenly—they occur fully as many times among the neat, among the clean,

and with the careful physician, as they do with the physician who is careless, and it strikes me we have not yet arrived at a sufficient knowledge in this matter.

DR. JAMES H. ETHERIDGE.—I was thinking, while the paper was being read, of the advance that has been made in obstetrics since I read medicine. All this idea of puerperal fever being sepsis has come up since then. Every once in a while we are finding another new thing. In the subject of abdominal palpation, this writer goes a step beyond, and gives us a glimpse of possible medico-legal complications in the future of obstetrical work. I wonder how long it will be before a suit will be entered against practitioners for malpractice, something like this: A woman is delivered, puerperal fever sets in, and she dies. By reference to articles like this, it is determined pretty definitely that this woman got sepsis from the physician's hands. If this paper, or articles similar to this, become incorporated in regular works on obstetrics, will it not be brought to the test at last in a court? If a man delivers a woman, and she has puerperal fever and dies, will he not be liable to criminal prosecution because he touched her? As to the subject of the paper itself, I can say nothing, as I know very little of the topic. If we are, as a society, to indorse that part of the paper which discourages examination by means of the finger in the vagina, it seems to me we should call a halt on such papers. The point is this, if we receive that paper without taking a rather decided stand against its drifting into medical literature, we are indorsing such ideas, we are placing ourselves directly in the way of having malpractice suits. I do not believe it is possible for a man to acquire the skill to tell what a presentation is by palpation, unless he has had an enormous experience under skilled instructors.

DR. W. W. JAGGARD.—Dr. Hoag's paper is a valuable supplement to the President's recent able enunciation of the Semmelweiss doctrine of puerperal fever. The two papers constitute by far the most important work of an obstetrical nature this Society has performed during the year. Before this discussion, I was inclined to the opinion that both papers were works of supererogation—so much has been spoken and written of the same tenor on these topics without the slightest dissent. The discussion, tonight, however, has demonstrated that such an opinion was totally erroneous. The outspoken skepticism with reference to the Semmelweiss doctrine of puerperal fever, and the value of abdominal palpation in obstetrical diagnosis, is probably due to inattention to the medical literature. Certainly the views expressed to-night on puerperal fever—as autogenetic and essential—are, as Fritsch remarks, antedeluvian.

The adequacy of the method of obstetrical diagnosis by abdominal palpation and auscultation has been demonstrated, and its value is no longer a legitimate subject for discussion before a society of specially trained practitioners, such as our little association claims to be. Litzmann has relied almost exclusively on the method, in his clinic at Kiel, since 1865. Halbertsma, Winckel, and Breisky permit vaginal examination of parturient women, for the sake of diagnosis, only in exceptional cases. Credé has recently re-affirmed his perfect confidence in the adequacy of the method. French observers laud abdominal palpation in extravagant terms. The admirable treatises of Parvin and Lusk contain r, distinct descriptions of the procedure.

There are no inherent difficulties in the mastery of the method. The methods of physical diagnosis, as applied to the thorax, involve the exercise of the faculty of attention in a much higher degree, and demand longer and more constant practice. No medical man here to-night doubts the value of abdominal palpation in the diagnosis of pathological abdominal tumors, nor is willing to admit his inability to adequately practise the method, even without "the enormous experience under skilled instructors," to which the gentleman who has just taken his chair has alluded. Dr. Hoag might well have included in his summary of the advantage of abdominal palpation in obstetrical diagnosis, its extreme value in the evolution of the sense of touch, capable of application in the diagnosis of all forms of abdominal enlargement.

One gentleman has spoken feelingly of the possibility of medico-legal complication following upon the general acceptance of the Semmelweis theory of puerperal fever. I hope to be pardoned for saying that this curious and amusing application of the doctrine of expediency is wholly irrelevant to the subject under discussion. The truth or falsity of the theory alone concerns us. Of course, the belief that every case of puerperal fever arises from the absorption of decomposing organic matter from lesions of the genital tract, and that the *materies peccans* is introduced from without, throws a tremendous weight of responsibility upon the physician and nurse. Provided the patient has been surrendered entirely to their control, and she becomes the subject of puerperal fever, one, or other, or both, have directly or indirectly infected her. The atmosphere, as a bearer of infection, may be excluded in the majority of cases.

THE PRESIDENT.—We have men in our Society who have believed for a long time that if septicemia takes place after any obstetrical or large surgical operation, there is a very grave doubt as to whether the operator is responsible for it. We cannot avoid taking up such questions; there is not a book on obstetrics written within the last seven or eight years, but takes up and indorses the views advanced by the paper read this evening.

DR. ETHERIDGE.—Do any of these books recommend the attending of cases of obstetrics and not examining through the vagina?

THE PRESIDENT.—They recommend, as far as possible, that examination shall be by abdominal palpation, and that the physician and nurse shall go to the bedside absolutely clean, which I say is not done in the majority of cases.

DR. H. P. MERRIMAN.—I feel inclined to take issue with Dr. Jaggard upon this point. It strikes me that the vagina in itself is not a very clean place in the majority of women, and that there is as much liability to sepsis from the vagina itself as from the physician's hand or finger. I should very much dislike to take a sponge or anything that contained a portion of the fluid of a woman in labor and bring it in contact with a wound where I wanted to guard against sepsis and against poisoning. I should be very much afraid to take any of that vaginal fluid and bring it in contact with the wound in an ovariectomy, or to make a vaginal examination and then proceed at once to the operation. Supposing I passed my disinfected finger into the vagina and then, without any new disinfection, proceeded to an ovariectomy, I should expect trouble. It strikes me we have more danger

from an unclean vagina than from the hands of the physician. I do not imagine that in the majority of instances the finger of the physician is such a contaminating source of trouble as is claimed. If this is the case, if it is all brought in from the outside, we ought to insist that there shall be no sheet used on the patient, no garment brought about the bed, no old quilt or anything of that kind placed in contact with her that has not been just washed and disinfected, and we should insist upon it that at the beginning of labor the vagina should be thoroughly disinfected by being douched with a corrosive solution, in order to prevent this danger of contamination to the patient.

DR. J. H. ETHERIDGE.—In continuation of this idea of the medico-legal bearing, let us imagine a case of prosecution of a physician for the death of a woman from puerperal fever. The claim is set up by the prosecution that the physician, making an examination through the vagina for the purpose of diagnosis, in the ordinary way (as has been done in all ages of the world) poisoned that woman, and she died, consequently the physician is responsible. Dr. Jaggard is called upon as an expert. Upon his testimony will the man rise or fall? The question is put to him, "Do you consider this practitioner responsible for this woman's death?" I would like to ask the doctor what he would say.

I am supposing a case, in which the physician is the only one who has had anything whatsoever to do with the vulvar orifice.

I feel very deeply and sincerely in regard to the utterances of this Society, as its transactions are published in the various journals, and to some extent have become an authority throughout the country, and in regard to the fathoming of such extreme notions in view of the possible legal complications that may arise, and that is why I have lugged in the side issue concerning the medico-legal aspect of the question.

DR. W. W. JAGGARD.—There are many facts, frequently of vital importance, such as the anatomical character of the pelvic cavity, lower uterine segment and vaginal portion, the vagina, the degree to which the presenting part has entered the pelvic cavity and the like, that can only be elicited adequately by vaginal exploration. Vaginal examination of the parturient woman is perfectly harmless, provided, (1) the vagina is disinfected, (2) the examining finger is absolutely clean and disinfected, and (3) no injury is inflicted upon the genital canal. In my own practice, I do not rely exclusively on abdominal palpation and auscultation in diagnosis, but endeavor to limit the number of vaginal examinations to the minimum. I have seen many cases of normal labor, in which the diagnoses were accurately made, and treatment successfully instituted without the introduction of the finger per vaginam. These cases occurred in hospitals where there was reason to fear carelessness in disinfection on the part of the examiner. This fact was urged to establish the adequacy of the method, as a means of diagnosis, not to advocate its exclusive employment.

I fail to see the pertinency of the case supposed by Dr. Etheridge, but have no objection to answering the question. If the physician's fingers were the *only objects* that had come into contact with the genital tract of the woman, and if he had not observed the precautions already mentioned, and if the atmosphere,

as a bearer of infection, could be excluded, it would be consistent with the facts in the case that the physician infected the woman.

The PRESIDENT read a paper, entitled,

OBSERVATIONS IN VIENNA. THE GENERAL HOSPITAL, BILLROTH, CARL BRAUN, BANDL, AND OTHERS.¹

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, July 6th, 1887.

JOHN WILLIAMS, M.D., *President, in the Chair.*

DR. STEAVENSON showed a number of instruments used in electrolysis, including a set of electrodes, etc., as used by M. Apostoli of Paris.

DR. HORROCKS exhibited a specimen of chronic endometritis with microscopical section.

DR. W. S. GRIFFITH showed a drawing and section of a uterus in which a "contraction ring" was well marked. It was removed shortly after a labor terminated by Cesarean section.

DR. LEWERS showed a fibroid tumor removed from the anterior vaginal wall.

DR. GALABIN brought two uteri which he had removed per vaginam for supposed malignancy, under the microscope; the one appeared to be more like ulcerating endometritis, the other was a case of round-celled sarcoma. The former patient recovered, but the latter died.

Adjourned discussion of Dr. Griffith's paper on

TUBO-OVARIAN CYSTS.

MR. DORAN considered that Dr. Griffith's definition of a tubo-ovarian cyst was sound enough for practical purposes. The term "ovarian cyst" was, however, vague, as the nature of cystic disease of the ovary, other than that kind for which ovariectomy was performed, was very uncertain. In any form of obstruction of the tube, such as that which led to cystic dilatation, the uterine end was probably closed by swelling of the mucous membrane. Mr. Doran then exhibited several specimens.

The Fallopian tube was very rarely diseased in true cystic tumor of the ovary. In one specimen where the tube was inflamed and bound down to the surface of the cyst, the ostium was patent and the fimbriæ unaffected. Another series of speci-

¹ [This paper, having been already published as an original article and otherwise in a number of journals, is omitted.—Ed.]

mens showed the most frequent origin of tubo-ovarian cysts namely, chronic inflammation of the uterine appendages, whereby the tube and ovary became bound together and ultimately underwent cystic degeneration, their dilated cavities communicating by the same process as was observed in the septa of multilocular cysts. Many observers made out that the obstructed ostium opened again into the cavity of the cystic degenerated ovary, but that was exceptional. The congenital form was very rare, but Paltauf's case recently reported in the *Archiv für Gynäkology* was probably of this kind. A woman died of peritonitis after attempted abortion; a fetal cyst was found behind the uterus which communicated with the dilated Fallopian tubes, so that there was a free channel from the uterine cavity round through the tubes and cyst back into the cavity. The parenchyma of the ovaries was flattened, but contained healthy follicles. This condition could hardly have been caused by disease; it was a congenital malformation, but Dr. Paltauf's memoir required study.

Congenital tubo-ovarian cysts and that kind where the fimbriæ adhered to a cyst on the surface of the ovary were exceptional. As a rule, a tubo-ovarian cyst was one of the forms of degeneration caused by chronic disease of the appendages.

DR. HORROCKS remarked that, whatever might be the true history of the formation of so-called tubo-ovarian cysts, whether primarily beginning in the Fallopian tube or the ovary or in neither, these structures were apt to become welded together where they were in contact, and he believed the starting point of such union was frequently the ovary.

DR. GRIFFITH replied.

ON DIABETES INSIPIDUS IN PREGNANCY AND LABOR.

By J. MATTHEWS DUNCAN, M.D.—The author cites two cases of the disease. One of them was congenital and persistent, and in it there were eleven pregnancies. He narrates other two cases from his own practice, and in one of these there were four pregnancies during the currency of the disease. Diminution of the quantity of urea secreted appears to be of great importance in it. Similar cases of greatly reduced secretion of urea, with feelings of weakness and sickness, Dr. Matthews Duncan has observed in women not pregnant nor recently delivered.

THE MECHANISM OF THE THIRD STAGE OF LABOR.

IV. *Some Causes of Retention of the Membranes.*

By FRANCIS H. CHAMPNEYS.—The author refers to the description of the process given in a former paper.

He shows that the "plane of least resistance" for separation of the membrane is in the decidua, generally in the ampuillary layer. Any change which renders this more tough, or which renders any other layer more friable, will alter this "plane of least resistance." Thus, undue friability of the chorion, or less firm adhesion between chorion and amnion than between the layers of the decidua, will determine a separation of the chorion and amnion.

The early separation of the lower pole of the ovum tends to guard against a common defect, viz., failure of separation (retention) of the membranes round the os internum. Rupture of the membranes at the proper time is an essential part of the proper mechanism. The proper time is, in nature, when the os is about three to three and a half inches in diameter, and has a projection of three-quarters to one inch. Premature rupture will prejudice the separation of the lower pole of the ovum. Too late rupture tends to produce prolapse of the bag, which is usually accompanied by giving way of the chorion and advance of the amnion alone. Undue or relatively undue toughness and elasticity of the amnion is equivalent to a tardy escape of the waters.

As regards the removal of the membranes by traction of the descending placenta, the author remarks that the membranes, as a whole, owe their tenacity principally to the amnion; the adhesion of the amnion to the chorion is no doubt one of the safeguards against retention of the chorion. Thus, any disorder of the first process of the mechanism tending to separate the two ovuline membranes, predisposes to retention of the chorion. An analysis of ninety cases bearing on the matter is appended.

The author concludes that—(1) The mechanism of the detachment and expulsion of the membranes is a complex act in three stages; (2) Timely rupture of the bag of membranes is an essential part of the proper mechanism, and too early or too late rupture alike predispose to retention of the chorion; (3) Disorder of any of the three stages in the mechanism tends to prejudice the whole process; (4) Among allied conditions may be mentioned too early or too late rupture of the membranes, prolapse of the bag of membranes, prolapse of the membranes (amnion) after delivery beyond the vulva; separation of the membranes found on examination of the placenta; retention of a ring of membranes round the lower pole of the uterus; retention of the whole chorion.

Practical Conclusions.—1. The membranes should generally be preserved till the os is fully dilated.

2. After this they are not only (in ordinary cases) useless, but they (that is, the persistence of the amnion) favor the retention of the membranes.

3. They should, therefore, be ruptured when the os is fully dilated.

4. In vertex cases, if the head has settled over the os uteri, the advance of a smooth, sausage-shaped protusion of membrane points to advance of the amnion alone, which favors retention of the chorion.

5. Separation of two membranes not only points to adhesion of the chorion, but renders its subsequent removal more difficult.

6. This axiom may be formulated: "When the membranes

advance low in a vertex case, look out for retention of the chorion."

NOTE ON THE RELATION BETWEEN THE IMPLANTATION OF THE PLACENTA AND THE INSERTION OF THE CORD.

By FRANCIS H. CHAMPNEYS.—In his work, "*Accouchemens Laborieux*" (suite p. 110 *et seq.*), no less an authority than Levret makes the following statements: That the insertion of the umbilical cord into the placenta varies as the insertion of the placenta on the uterine wall. If the placenta is central, the cord is centrally inserted; if the placenta is eccentrically planted, the cord is inserted nearer to the lower edge; if the placenta approaches the lower uterine orifice, the cord is inserted to its edge ("*battle-door placenta*"), and, indeed, to its lower edge.

This is given, without corroborative facts, as an *ipse dixit* of Levret; but it still survives though more than one hundred and thirty years old, and has even (at least in part) been indorsed by the writers of some of our most recent books.

Under these circumstances, I have thought it worth while to put the matter to the test. If it should prove true, it is so remarkable a fact that it should be accounted for; if it is false, the sooner it is relegated to the proper place for unauthorized statements and *ipse dixit*s the better.

The following analysis of 188 cases treated in the General Lying-in Hospital is offered as a solution of the question. The patients number 188, but as one of them bore twins the number of placentæ is 189.

The table contains the class of insertion of the cord, states whether the insertion was up or down, gives the measures from which this is derived. The two next columns give the position of the placenta in the uterus; the two last columns give the position of the insertion of the cord in the uterus.

It will be seen that there is no order or proportion apparent in any of these relations.

As regards the position of the cord:

Insertion of cord.	Direction of point of insertion.			
	Up.	Down.	Midway.	Not noted.
Central,	17	18	17	4
Lateral,	46	54	16	1
Marginal,	7	5	0	
Velamentous,	1	1	2	
	71	78	35	5
Total,	189			

Levret's dictum, therefore, has no foundation in fact.

THE PRESIDENT, in opening the discussion on Dr. Champneys' series of valuable papers, did not think that late rupture need cause retention of the membranes.

DR. MATTHEWS DUNCAN valued highly this series of papers. He would have preferred protrusion or expression of the membranes to prolapse, as bearing a truer meaning. He was not inclined to adopt any rule of interference by rupturing the membranes at a certain stage of the dilatation of the external os, regarding all kinds of interference as undesirable, except when distinctly called for. He did not regard the site of rupture of the membranes as a sufficient basis for a statement of the height of the placental insertion on the uterine wall.

He thought Dr. Champneys had disproved Levret's dictum as to insertion of the cord.

DR. CHAMPNEYS, in reply, said that when he spoke of late rupture of the bag of membranes, he did not refer so much to time, but to a certain point in the process; that after the bag was hemispherical, its dilating power ceased, and it could not advance without rupture of the chorion; and if this took place, the amnion advanced alone and peeled itself off the chorion, which then was often left behind. He used the term "prolapse" of the bag as an exact translation of the technical German for this occurrence, and, to avoid mistake, had placed the term in brackets in the paper.

He thought the method adopted for determining the seat of the placenta was the best we possessed, and that the errors in a large number of cases would not be sufficient to invalidate general conclusions.

Wednesday, October 5th, 1887.

W. F. CLEVELAND, *Vice-President, in the Chair.*

MR. BUTTER-SMYTHE showed a fibro-cystic tumor of the uterus, together with the uterus and ovaries, which he had removed that afternoon.

MR. ARBUTHNOT LANE read a paper entitled,

WHAT ARE THE CHIEF FACTORS WHICH DETERMINE THE DIFFERENCES WHICH EXIST IN THE FORM OF THE MALE AND FEMALE Pelves ?

The writer criticises the supposition that many, if not all, of the differences which exist in the form of the male and female pelves are due to force exerted by the femora and sacrum upon the innominate bones.

He considers that the conditions of the thorax and pelvis are exactly analogous in the two sexes. He describes in detail the manner in which the female thorax differs as a whole and in its constituent parts from the male thorax, and he thinks that the factor which determines the altered form of the female thorax from the male thorax (which he regards as the original type) is the additional function performed by the former, namely, that of accommodating the fetus during the later months of pregnancy. In the case of the pelvis, that of the female performs one func-

tion in addition to those performed by the male pelvis. That additional function is the support and transmission of the fetus, and he regards this as the sole factor which determines the variations in form in the two sexes.

He thinks that there is a fallacy in arguing from the manner in which certain forces produce changes in the pelves of diseased female subjects during the lifetime of a single individual, that the same forces acting upon a healthy female subject determine this peculiarity in the form of the pelvis, and that, should these forces be absent, the characteristic peculiarities do not result. He attempts to prove this point by applying the same argument to the analogous condition of the female thorax.

He discusses the two most common variations in the form of the male pelvis and their probable cause. He shows that these variations do not occur in the female subject, and he considers that the pressure exerted by the fetus, represented as a developmental factor, is the cause which prevents the occurrence of such variations in the female subject.

He also refers to the condition of asymmetry of the costal cartilages and sternal pleurostea, which is normal in the ape, and to the occasional occurrence of such a condition in the human subject.

He attempts to explain the causation of this asymmetry in both cases, and to prove that the tendency to produce a certain result in the parent results in its actuality in the offspring.

He then alludes to pressure changes due to carrying loads upon or in front of the trunk, and from premises gathered from these several points he comes to the conclusion that the sole determining factor of the variations in the form of the male and female pelves is, as in the case of the thorax, the force or pressure exerted by the fetus.

DR. HERMAN agreed with Mr. Lane in holding that the form of the pelvis was due to inheritance, *i. e.*, to influences acting on many generations of ancestors, more than to forces acting during the life of an individual. But he thought the way in which the shape of the pelvis was modified in transmission through many generations was mainly this, that women with well-shaped pelves were able to bear large, strong children, likely to survive and to inherit and transmit that type of pelvis, while women with small pelves produced either still-born children or small, weak children, not so likely to survive, and so a stock with small pelves tended to become few. If Dr. Herman interpreted literally Mr. Lane's view of the way in which the shape of the pelvis was modified, *viz.*, directly by the pressure of the head during labor, he could not agree with him. The head only pressed on the bones bounding the pelvic cavity during the second stage of labor. This stage, on the average, lasted less than two hours. Supposing the individual to have ten children (which was the largest estimate of the average), this made twenty hours pressure during the whole of life, and usually no part of this pressure was exerted till after ossification was complete. He could not attribute any appreci-

able influence on the shape of the pelvis to pressure so brief and intermittent, exerted on hard, fully ossified bones.

DR. PLAYFAIR said that Mr. Lane seemed to assume that pressure was generally described by authors on midwifery as determining the shape and dimensions of the female pelvis. He could recollect no modern text-book in which such a reason was given, the generally-received explanation being that the increased size of the female pelvis was caused by the fact of the reproductive organs being contained within the pelvic cavity in women, and not external to it as in the male. It seemed very probable that a process of evolution might in time produce pelvic changes from constant factors, but not from accidental and occasional circumstances such as the presence of a fetus in utero.

DR. GALABIN had never understood that the mechanical effects of the body-weight and muscular action were supposed to bring about the characters special to the female pelvis, but that the peculiarities of the female had been ascribed to the forces of development or the presence of the genital organs in the pelvis.

If any peculiarity in an individual of one sex tended to be transmitted to the same sex more than another, it might be capable of proof in the breeding of animals. Dr. Galabin thought that any special character, as size, color, or strength, was transmitted to sons and daughters equally. The principle would be one of great interest as regards the future of our race if it were established. Strong-minded women were wont to ascribe any slight inferiority of women's intellect which others might admit to the fact that women have been kept in a kind of slavery for many generations. He had always thought this was a fallacious argument, and that if women had in any way suffered, their sons would be the losers as well as their daughters. If Mr. Lane's principle were true, the case was altogether different, and if women exercised sufficiently their intellects and their bodily powers, they might, in course of generations, not only wipe out any slight mental inferiority, but come to equal or even surpass the men both in average stature and muscular strength.

DR. MATTHEWS DUNCAN had greatly admired Mr. Lane's former papers on the skeleton, and took special interest in the explanation of the changes of the pelvic joints in the end of pregnancy by mechanical influences.

DR. CHAMPNEYS wished Mr. Lane to name any eminent obstetric writers who assigned sexual peculiarities to causes common to the sexes. He had never met with such a statement.

The effect of pressure on respiration cannot begin before the sixth month, which leaves three months in each pregnancy, or thirty months in ten pregnancies, and against this we have to put the remainder of the whole of a lifetime of say sixty years.

The production of alterations in the skeleton during pregnancy was one thing, and the alteration of the skeleton by laborious occupations was quite another thing.

MR. LANE, in reply, was sorry that it would be impossible to attempt to answer off-hand the many questions and criticisms, which would necessitate a complex and lengthy reply, but preferred to base his case on the material contained in the paper.

DR. J. MATTHEWS DUNCAN presented a paper

ON TONIC UTERINE CONTRACTION WITHOUT COMPLETENESS OF
RETRACTION,

in which he called attention to the occurrence of a rigid, spastic condition of the uterus, especially just after delivery, without complete retraction and while the uterus has no content opposing complete retraction or closing. In this state the hard uterus has a globose cavity. He more particularly calls attention to the occurrence of hemorrhage from the placental site while the uterus is in this state of firm spastic contraction with incomplete retraction, and mentions cases.

He regards this hitherto unknown or unrecognized condition as probably affording an explanation of the well-known difference of opinion among obstetric authorities, some asserting the occasional occurrence of hemorrhage after delivery from a hard contracted uterus, some denying it.

A similar condition, he believes, occurs very rarely in the unimpregnated uterus.

DR. HERMAN had published a case, in the *Lancet*, p. 1,110, 1882, to illustrate the practice of injection of fluid into a vein. This was a case of secondary hemorrhage coming on nine days after delivery. When seen by Dr. Herman, the uterine cavity was globose and large enough to contain a fetal head, and its walls were hard and rigid. The interior was swabbed with solution of perchloride of iron, and this was followed by thorough contraction of the uterus and arrest of hemorrhage.

DR. HORROCKS asked if the cervix as well as the fundus was affected by the tonic contraction, because in regard to cavities such as the uterine and vesical, when the detrusor contracted the sphincter dilated. In Dr. Duncan's case, though the contraction of the uterus was tonic, it was incomplete, leaving an actual cavity.

He mentioned a case in his own practice where bleeding came on ten days after labor. The fundus was contracted and hard and yet the cavity not closed.

DR. GALABIN was specially interested in hearing this paper because he had thought that in a former paper Dr. Duncan had not distinguished a sufficient number of conditions in which the uterine wall might possibly be. He had understood him to identify that state of continuous action or tetany of the uterus with retraction. Dr. Galabin considered it was quite different, and more analogous to the post-partum condition now described.

Retraction was a normal sequence of contraction. Continuous action was abnormal and might be even antagonistic to retraction, for after such continuous action the uterus was liable to post-partum hemorrhage. He remembered a case of cancer of the whole cervix in which the uterus passed into a state of continuous action without any rhythmical pains having occurred and the pulse became accelerated as in prolonged labor. Cesarean section was performed. The uterus did not retract, hemorrhage took place from the placental site, and was only stopped by perchloride

of iron. He thought such a condition might have a distinct analogy to rigor mortis. In rigor mortis, a muscle was rigid as if strongly contracted, but if the tendons were divided the muscle did not retract in the least. The condition was really one of stiffening.

DR. CLEVELAND said he had been sometimes puzzled to account for bleeding after natural labor where the uterus seemed of natural size and contracted, but as these cases occurred in delicate women, he attributed them to the effects of an hemorrhagic diathesis. He was convinced that in earlier experience his anxiety to remove clots from the uterus may have been carried too far. He now believed that, where bleeding resulted from imperfect coagulation, it was necessary for a clot of some size to remain within the uterus.

DR. CHAMPNEYS thought that these cases threw some light on the vexed question of the action of ergot, which in some cases seemed to produce tetanus of the uterus without reducing its size or producing retraction.

DR. JOHN PHILLIPS reported

A CASE OF PREGNANCY COMPLICATED BY SECONDARY HEPATIC CANCER.

The patient, aged 40, mother of nine children, was operated upon in November, 1883, for scirrhus of the right mamma. The registrar of St. Thomas's Hospital has kindly furnished a report of her condition. Six months afterwards she was seen by the author for considerable pain in her right side; she was then six months pregnant. The pain increased in spite of all remedies, and her condition became so grave that, after consultation, induction of labor was performed. An easy labor followed, and, on the uterine tumor lessening, the liver was found enlarged and covered with umbilicated bosses, probably of a malignant nature. Jaundice and ascites appeared and she died comatose three days after her confinement.

The author makes a few remarks as to the treatment in these cases, confining his attention more particularly to the rectitude of induction of premature labor. He also quotes one other case of a similar character.

DR. HERMAN had read a paper before the Society (Trans., vol. XX.) on the complication of pregnancy with cancer of the genital canal. In that paper, he had discussed the influence of pregnancy on cancer of the genital organs, and had said that from the greatly increased blood supply to the breast and uterus during pregnancy we should expect that cancer of those parts would grow quicker if the patient became pregnant; and he had quoted a case which showed that this was so. A colleague had since communicated to him another case which showed the same thing.

Dr. Phillips had referred to authors who were of opinion that pregnancy retarded or suspended the growth of mammary cancer. Dr. Hernian believed that this was an opinion not supported by observation. He had shown that, in cancer of the uterus, pregnancy frequently ended in the birth of a decomposed fetus due to the cancerous cachexia causing the intrauterine death of the

child. This was a strong reason for bringing on labor prematurely, as Dr. Phillips had done.

Dr. Phillips had spoken of Cesarean section being dangerous for the child. He doubtless based this opinion on the fact that the statistics of this operation showed a high infantile mortality. Dr. Herman thought statistics were here misleading. The risk which the child incurred in Cesarean section was almost nothing, and the high death rate of the children arose from such circumstances as too late performance of the operation, want of attention to the child at the time of operation, etc., etc. If the operation were done when the child was alive, and with proper precautions for its safety, there was no reason why its life should be lost.

DR. JOHN PHILLIPS, in reply, thought that induction of premature labor was preferable to Cesarean section.

A CASE OF HEMATOCELE SUCCESSFULLY TREATED BY OPERATION.

By DR. JOHN PHILLIPS.—A young married woman was attacked, during menstruation, with rheumatic symptoms. There was an aortic systolic murmur. Metrorrhagia continued for a month. A tumor the size of a tangerine orange was found in Douglas' pouch, and after seven days a large swelling had formed in the left broad ligament, pushing up the uterus to the right, and producing a considerable abdominal swelling.

The tumor descended towards the rectum, and, in consequence of the precarious condition of the patient, aspiration was performed with no result. The next day, the cyst was opened under ether per vaginam with a Pacquelin's cautery, and a large amount of blood-clot let out. A Keith's ovarian drainage tube was inserted. The tumor rapidly subsided, and the patient made a good recovery.

DR. GALABIN thought the case of interest as bearing upon the question when vaginal section and when abdominal section should be chosen, if it became necessary to operate on a hematocele. He had never intentionally opened a hematocele, but had twice made an exploratory abdominal section with good result in cases which turned out to be hematocele, not dependent on extrauterine fetation. In both cases, there was an elastic tumor reaching to the umbilicus. In both, the peritoneal cavity was washed out with hot water, the contents of the hematocele having in one of them been in an intensely fetid condition. In one of these cases, double pyo-salpinx was found and removed, and the advantage of abdominal section was its allowing the removal of sources of mischief.

DR. HERMAN thought that in cases in which the formation of hematocele was followed by gradually increasing pyrexia, the practice which he followed, viz., to let out the blood, was the right one. The majority of cases of hematocele got quite well under expectant treatment.

DR. ARMAND ROUTH thought Dr. Phillips' practice was the correct one. An incision into the tumor per vaginam was less dangerous than an abdominal section, and in the former the peritoneal cavity was not opened, as the bulging downwards of Douglas' pouch proved that adhesive peritonitis had closed this above.

DR. CHAMPNEYS said that where it was necessary to open a hema-

tocele, it was certainly best to open it freely, and drain, and use antiseptic precautions. Much of the bad results in the past were, he thought, due to aspiration without free opening and drainage, septic matters being introduced into the sac without free escape.

REVIEWS.

A SYSTEM OF GYNECOLOGY, BY AMERICAN AUTHORS. Edited by MATTHEW D. MANN, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, N. Y. Vol. I., p. 770. Illustrated with three colored plates and two hundred and one engravings on wood. Philadelphia: Lea Brothers & Co., 1887.

Conceived in the early part of 1882, this work has had a prolonged gestation and a difficult parturition, passing through the hands of several eminent gentlemen before coming under the supervision of Dr. Mann, who is to be congratulated upon having brought the labor to a successful issue, in so far, at least, as this the first volume is concerned. The others, he states, will be delivered at intervals of six months. The present volume, as a specimen of the mechanical and artistic in the book-maker's art, is creditable to the publishers. Binding, paper, type, and press-work are all of superior quality. Most of the engravings, however, are already familiar, and the colored plates are old and tried friends, who have suffered somewhat at the hands of the lithographer and show it in an abnormally heightened color.

The literary and practical value of the work is high, and certain of the chapters are of exceptional value. Written by many authors, the first impression is that it is somewhat fragmentary, yet a more careful inspection shows but few unfilled spaces and but little overlapping of subjects or teaching. The two volumes will make a fairly complete exposition of the subject, and though, to be complete, a work of this nature must, in the fields of anatomy and pathology, necessarily bear many references to the work of those in the old world, the majority of the essays carry a distinctively American personality and show conclusively the brilliancy and value of America's advance in gynecology. To aid in giving an intelligent idea of their scope, some of the more prominent features of the fifteen monographs are noted below.

The opening paper, an *Historical Sketch of American Gynecology*, by Edward W. Jenks, of Detroit, is a scholarly epitome of the facts which form the foundation of gynecology as it now stands in America.

This JOURNAL was the first to be devoted exclusively to gynecology and obstetrics, and, while its inception is to be credited to Dr. Dawson, its present success and wide influence are in great measure due to the ability of its present editor, into whose charge it came fourteen years ago, an infant dying of inanition, while now it has grown to be a power in this and other lands. This credit Dr. Jenks has not fully given, thus leaving one point for adverse criticism.

The Development of the Female Genitals, and *Malformations of the Female Genitals*, are the titles of the two papers contributed by Henry J. Garrigues, of New York. These, while necessarily

compilations, are complete and show careful research. The prevailing views are those of Kölliker, Waldeyer, and Kussmaul.

The one hundred and forty pages describing *The Anatomy of the Female Pelvic Organs*, by Henry C. Coe, of New York, a peculiarly successful attempt to "present a brief and accurate review of the pelvic organs as regarded from the standpoint of practical gynecology," is felicitously expressed, and embodies many little points of original research. Some minute details, interesting only to the anatomist, have been omitted, only to leave more space for those suggestions showing the practical value and application of the details noted.

Gynecological Diagnosis is discussed by Egbert H. Grandin, of New York, in a clear, comprehensive, practical manner, and with that broadness of mind which allows of his "looking beyond the organs he habitually treats, to the recognition of the fact that symptoms pointing to the uterus do not necessarily mean disease of that organ, and the converse, that serious uterine disease may be masked under symptoms directing attention to some other organ of the body."

A General Consideration of Minor Gynecological Surgery, by E. C. Dudley, of Chicago, begins by giving the essentials of successful antisepsis, then discusses certain therapeutic measures, then when to operate, preparatory treatment, operation table, anesthesia, suture material, assistants, instruments, the technique of plastic operations, dilatation of the uterus, the curette, etc.

The next paper, on that usually much neglected subject in gynecology, *General Therapeutics*, is by Alex. J. C. Skene, of Brooklyn, and is a consideration of the selection and manner of use of the most reliable means to be employed in the diseases peculiar to this specialty.

The chapter on *Electricity in Gynecology*, by A. D. Rockwell, of New York, is practical, judicious, and embodies the latest advances in this branch of medical science. He shows in detail for what and when electricity should be employed and what results may be expected, giving, in addition to the results of his own researches, some of the deductions reached by Mundé, Apostoli, and Engelmann.

Menstruation and its Disorders, by W. Gill Wylie, of New York, is, in certain respects, the most original paper in the volume, the individuality of its author standing clearly forth in many of the opinions expressed.

Sterility, by A. Reeves Jackson, of Chicago, is a concise, well-written, and scientific resumé of this important subject from which nothing of value or interest has been omitted.

Diseases of the Vulva are described by Matthew D. Mann, of Buffalo. After a few words concerning the treatment of malformations, he takes up injuries and wounds, then hernia, hydrocele, vulvitis, furunculosis, ulcerations, edema, gangrene, phlebectasia, hematoma, diseases of the vulvo-vaginal gland and of the skin, serpiginous vascular degeneration (a rare disease, first described by Lawson Tait), hyperesthesia, vaginismus and vaginismus superior (cohesio in coitu), coccygodynia and new growths.

The Inflammatory Affections of the Uterus, by Chauncey D. Palmer, of Cincinnati, is a paper of which any author might be proud; the style is crisp and concise, the arrangement careful and systematic, the description clear, the observations keen.

Subinvolution of the Uterus and Vagina is discussed by Thaddeus A. Reamy, of Cincinnati, from a somewhat different point of view from that of Dr. Palmer; Dr. Reamy considering, as the result of his investigations into its etiology and pathology, that subinvolution may be, and often is, succeeded by chronic metritis, but that they are not both integral parts of one morbid process, while Dr. Palmer applies the term chronic metritis to the whole morbid process, of which hyperemia, subinvolution, hyperplasia, and sclerosis are but single features or successive steps.

The paper closes with a consideration of the pathology, etiology, and treatment of vaginal subinvolution.

Periuterine Inflammation, by Richard B. Maury, of Memphis, is considered under three heads: Pelvic peritonitis, pelvic cellulitis, and pelvic abscess. The treatment advised for these conditions is that generally accepted by recent and progressive authorities.

The concluding paper of the volume, *Pelvic Hematocele and Hematoma*, by Ely Van de Warker, of Syracuse, is erudite and complete, discussing each of these symptomatic conditions in all its various phases of history, etiology, pathology, symptoms, and treatment. w.

L'OBSTÉTRIQUE ET LA GYNÉCOLOGIE EN 1886.—OBSTETRICS AND GYNECOLOGY IN 1886. Edited by DR. LUTAUD. Paris: J. B. Baillière, 1887, pp. 494.

In collaboration with Apostoli, Gallard, Rodet, Ferrier, Vulliet, Le Blond, and other French gynecologists and obstetricians, M. Lutaud presents in this volume a summary of the principal contributions to these branches of medicine which appeared during 1886. The book being intended for the general practitioner, the articles selected for abstract are, in the main, those which the editor considered of a most practical nature, and, as regards French literature, the work is probably very representative. German and English productions have not received the space to which they are proportionately entitled. In the list of the articles which the editor considers of chief importance, we do not find a half-dozen emanating from other nationalities than the French. Obviously the book cannot lay claim to even approximate completeness. E. H. G.

LEHRBUCH DER GEBURTHSHÜLFE FÜR AERZTE UND STUDIRENDE.—TEXT-BOOK ON OBSTETRICS FOR PRACTITIONERS AND STUDENTS. By DR. PAUL ZWEIFEL, Professor and Director of the Obstetrical and Gynecological Clinic at Erlangen. Stuttgart: Ferdinand Enke, 1887, 212 woodcuts, three colored plates, pp. 792.

This is an essentially practical text-book on obstetrics. Theory finds little place in it; the author's teaching consisting in what he has himself found useful and worthy of acceptance. The book is an outgrowth of Zweifel's previously published work on operative obstetrics, and is altogether in accord with modern views. It differs from the generality of treatises on obstetrics, in that the opening pages are devoted to a consideration of the prophylaxis of puerperal fever, thus bringing into the greatest possible prominence the one question of all which is of paramount importance to the woman and to the obstetrician. As a guide to the practitioner, this work will not suffer from comparison with others recently issued. E. H. G.

PATHOLOGIE UND THERAPIE DER FRAUENKRANKHEITEN.—THE PATHOLOGY AND THERAPY OF THE DISEASES OF WOMEN. By AUGUST MARTIN, M.D., Docent in Gynecology at the University of Berlin. Second edition, revised and enlarged. Vienna and Leipzig: Urban & Schwarzenberg, 1887, 210 illustrations, pp. 536.

The first edition of this excellent work received a careful analytical and critical review in the number of this JOURNAL for February, 1885. With the statements then made in regard to this work, we find ourselves in the main in agreement. Sufficient here if we recall the fact that Martin has not aimed at writing a systematic treatise on the diseases of women, such as would answer the needs of the student, but that he has chiefly presented the subject matter from the practical standpoint of the general practitioner and of the specialist. The portion of the work devoted to gynecological operations is especially strong, the methods which have answered the author well being minutely described and illustrated. The popularity of the work is well attested by the fact that it has been translated into the Russian and the Spanish.

E. H. G.

SUR UN NOUVEAU TRAITEMENT DE LA MÉTRITE CHRONIQUE ET EN PARTICULIER DE L'ENDOMÉTRITE PAR LA GALVANO-CAUSTIQUE CHIMIQUE INTRAUTÉRINE.—A NEW METHOD OF TREATMENT OF CHRONIC METRITIS, AND ESPECIALLY OF ENDOMETRITIS, BY INTRAUTERINE CHEMICAL GALVANO-CAUSTIC APPLICATIONS. By DR. G. APOSTOLI, Professor of Gynecology and of Electrotherapy at the *Ecole Pratique*, etc. Paris: Octave Doin, 1887, pp. 68.

In the opinion of the writer of this monograph, there would appear to be no limit to the sphere of usefulness of electricity in the treatment of the diseases of women. The methods which he advocates are most radical—in certain respects, indeed, transgressing boundaries which distinguished teachers and specialists everywhere have insisted should be respected. The views held by Apostoli, however, are presented by him with such honesty of conviction as to cause his audience to pause and ponder and, eventually, to wish to test them; for if the methods advocated should realize, in the hands of others, the results which are claimed, much of the minor therapeutics of the past will have to be abandoned in favor of that at our disposal through resort to electricity, after the manner indicated in this monograph.

In this monograph, then, Apostoli describes the implements necessary for the successful carrying out of the plan of treatment he advocates for cases of areolar hyperplasia (so-called chronic metritis) and endometritis: he justifies resort to the high electrical intensities he is in the habit of using; he gives us, with minute detail, the steps of the method of application; he concludes with a statement of the reasoning which leads him to deem the method a rational one and with his answers to the possible objections which might be urged against it.

The monograph must be read and studied by all who are anxious to test these new applications of electricity. It is impossible to analyze it with any show of justice within the necessary limits of this notice. We understand that it will shortly appear in English, so that all unfamiliar with the French will have an opportunity to form their own conclusions.

E. H. G.

LESSONS IN GYNECOLOGY. By WILLIAM GOODELL, A.M., M.D., Professor of Clinical Gynecology in the University of Pennsylvania, etc. Third edition, thoroughly revised and greatly enlarged. Philadelphia: D. G. Brinton, 1887. One hundred and twelve illustrations, pp. 579.

These lessons are so well known that it is entirely unnecessary to do more than to call attention to the fact of the appearance of the third edition. It is too good a book to have been allowed to remain so long out of print, and it has unquestionably been missed. The author has revised the work with special care, adding to each lesson such fresh matter as the progress in the art rendered necessary, and he has enlarged it by the insertion of six new lessons. This edition will, without question, be as eagerly sought for as were its predecessors.

E. H. G.

ABSTRACTS.

1. Leopold: The Frequency of Malignant Growths of the Ovary and their Surgical Treatment (Reprint from the *Deutsch. Med. Woch.*, 1887).—In 1874, the author called attention to the fact that malignant tumors of the ovary were of more frequent occurrence than was the general belief. Olshausen, Cohn, and Schröder have noted the same fact. In an analysis of Schröder's ovariectomies, Cohn found that 16.6% were malignant growths, or such as had a tendency to become malignant, and of this number 19.5% remained free from recurrence after operation at the end of a year. From this analysis, Cohn reached the conclusion that every proliferating ovarian tumor, especially when bilateral, should be removed as soon as possible, in which opinion L. agrees with him, instead of accepting Spencer Wells' dictum to wait in the case of an ovarian cyst until the patient's strength began to fail. By accepting this line of practice, L. claims that many an operation would be performed too late. From an analysis of 110 ovariectomies which he has performed, L. finds that his percentage of malignant growths is much higher than Schröder's, and that his results as regards freedom from recurrence are very favorable. In twenty instances, 18.1%, the growths were malignant; or, including six incomplete ovariectomies, of 116 cases there were 26 malignant tumors, 22.4%, which figure is about 6% above Schröder's. Of the 110 completed ovariectomies, 4 or 3.6% died of septic infection, but not one of this number had a malignant growth. Of the 26 malignant cases, 5 died, or 19.1%, and all from shock. Within six weeks after operation, three more died from lack of strength. Of the entire number which recovered from the operation, four were free from recurrence after the lapse of one and one-half to three and one-quarter years. From these figures of L.'s it is apparent that the proportion of malignant to non-malignant growths is as 1 : 4.5, Schröder's figures being 1 : 6. Of L.'s cases, 9 or 45% died of recurrence, whilst of S.'s only 17.3%. Largely from these

considerations L. favors the removal of the smaller ovarian cysts as soon as possible, particularly where they are bilateral.

E. H. G.

2. A. Martin: Statistics of Vaginal Hysterectomy for Carcinoma (Reprint from *Berlin. Klin. Woch.*, No. 5, 1887).—Since June, 1880, 134 vaginal hysterectomies have been performed in Martin's clinic. Of this number, the operation was performed in 94 for cancer, 28 being incomplete operations. The mortality from the 66 completed operations was 18%, the causes of death being: sepsis, 5 cases; collapse and anemia, 4 cases; embolism, 1 case; general cachexia with chronic bronchial catarrh, 1 case. Up to the end of the year 1885, 44 cases were operated upon, and this number is utilized for drawing conclusions as to the ultimate result, this being recurrence in 13 (29.7%), cure in 31 (70.3%).

E. H. G.

3. C. Braun: Thirty-eight Hysteromyotomies with Extra-peritoneal Treatment of the Pedicle (*Wien. Med. Woch.*, Nos. 22 et seq., 1887).—These operations were performed between 1884 and 1886, and the results were: deaths 15.5%, recoveries 84.5%. The cases are tabulated.

E. H. G.

4. Budin: Incomplete Transverse Septum of the Cervix (*Progrès Médical*, 1887).—Two personally observed cases of this anomaly are recorded and illustrated. Similar instances have been reported by Breisky, Müller, and Bidder. Embryologically it is difficult to explain the formation of this septum. That a similar anomaly may exist in the lower segment of the uterus appears probable from two cases which are included in this paper, and which were reported to B. by the head midwife of the maternité.

E. H. G.

5. Marie Schlee: The Distention of the Abdominal Walls during Pregnancy (*Ztschrift. f. Geb. u. Gyn.*, XIII., 1).—In this paper are given the results of personal investigations into the changes which occur in the abdominal walls through the distention following on pregnancy. In regard to diastasis of the muscles, as the result of fifty-five measurements, S. concludes that the linea alba does not return to its original dimensions, remaining from two to three cm. broader than in women who have never borne children. In regard to the formation of the lineæ albicantes, the general conclusion is that every lasting distention of the skin, of whatsoever nature, leads to stretching of all the layers of the skin; that occasionally the result may be an over-distention which leads in particular to tears in the layers of the cutis.

E. H. G.

6. Th. B. Hausen: The Puerperal Involution of the Uterus (*Ztschrift. f. Geb. u. Gyn.*, XIII., 1).—In this elaborate paper, after an analysis of the results obtained by others from external and internal measurements undertaken during the puerperium, H. describes in detail his own experiments and the method after which they were undertaken. These measurements were one thousand and forty-eight in number, performed on two hundred puerperæ, on the tenth day post partum, on the fifteenth day, then every week up to the end of two

months, and every two weeks to the expiration of twelve weeks after labor. The results are tabulated under the respective headings: Primiparæ; Multiparæ; Miscarriages; Premature Labors; Non-nursing Women; Complicated Labors; Complicated Puerperium. The conclusions may be summarized as follows: 1. In twenty-five instances (12 primiparæ, 13 multiparæ) after normal labor at term, the progress of involution was noted beyond eight weeks, and in one-half involution was then complete, whilst in the remainder this did not occur till the third month. No special difference was found to obtain as regards the progress of involution in primiparæ and in multiparæ after the tenth day. Involution seemed to progress less rapidly after premature labor than after labor at term. In the normal puerperium, after normal labor at term, the uterine cavity remained larger and the process of involution was more protracted in women who did not nurse than in those who did. In the normal puerperium after twin births, or after those complicated by much hemorrhage, involution was somewhat slower than after uncomplicated labor; the difference was especially marked on the tenth and fifteenth day. Retention of the secundines seems to be a cause of protracted involution.

H. also made a number of measurements for the purpose of determining whether any deductions of value from a medico-legal standpoint could be drawn. In one hundred and sixty-three puerperæ, fifteen days after delivery near term, in two only was the measurement less than nine centimetres; three weeks after delivery, of one hundred and thirty-five cases, in two only was the measurement less than eight centimetres. The conclusion is thence drawn that, if on careful measurement the uterine cavity measures much below eight centimetres, the chances are very slight that a child has been born within three weeks; and if the measurement is not at least nine centimetres, then the chances are exceptionally slight that delivery has occurred within two weeks. Generally then, measurements by the sound two weeks after delivery at term, or within six weeks of term, will give us positive indication as to delivery having occurred; after the third week, the data obtainable are lacking in value as positive evidence.

The last question H. considers is the form and position of the uterus during involution. The results of his examinations were: On the tenth day, he found antelexion, 95 per cent; pure anteversion, 1 case; retrodeviation, 0 case; on the fifteenth day, antelexion, 85 per cent; normal position, 11 per cent; retrodeviation, 3.4 per cent; six weeks after delivery, antelexion, 46.6 per cent; retrodeviation, 5.5 per cent; normal position, 50.9 per cent. (Obviously, we have barely been able to sketch some of the leading points in this paper. Those interested in the subject will find the article very complete as regards detail.)

E. H. G.

7. Leopold: Forty-eight Total Extirpations of the Uterus for Carcinoma, Complete Prolapse, and Aggravated Neuroses (*Archiv f. Gyn.*, XXX., 3).—In these instances, the removal of the uterus was accomplished per vaginam. Of the forty-eight instances, forty-two were of carcinoma, four of complete prolapse, two of aggravated neuroses. The cases of carcinoma were not specially selected, and in a number of them to-day the radical operation would not be attempted, and in many of them,

therefore, recurrence quickly set in. The mortality following on the operation in the forty-eight cases was 6.2 per cent. In all the cases, the operation was performed with the uterus *in situ*, the broad ligaments being tied in layers. Of the three fatal cases, two died of sepsis, and one of ileus. Of the carcinoma cases, twenty-six are utilized for data in reference to recurrence; and of this number, eighteen were healthy from one to three and a quarter years after operation, or 69.2 per cent. In the instances where the operation was performed for total prolapse, the vaginal walls were in such an advanced stage of senile atrophy, and the uterus so enlarged and heavy that all other operative measures had failed. The essentials of the cases where the operation was performed for neuroses are as follows: *Case I.*—Aged 31, married ten years, no children or miscarriages, suffering from double chronic oöphoritis and perisalpingitis following on gonorrheal infection. Castration performed in April, 1884. Five months thereafter, the menses recurred and the former neurotic symptoms, and on examination a small, movable, painful nodule was detected at the site of removal of right ovary (ligature? neuroma?). Total extirpation performed in February, 1885, and this nodule turned out to be a thickening of the connective tissue in the broad ligament. Patient discharged at end of five weeks, relieved of her symptoms, except vomiting. In January, 1887, apex catarrh developed. *Case II.*—Age 29, one child; opium eater. Uterus retroflexed, ovaries enlarged and inflamed (gonorrheal oöphoritis and salpingitis). Castration in November, 1885; ovaries so adherent that they could only be removed piece-meal. Symptoms not relieved. In January, 1886, total extirpation of uterus and ovarian remnant. In February, 1887, entire freedom from previous symptoms.

E. H. G.

8. Meinert: Tetanus in Pregnancy (*Archiv f. Gyn.*, XXX., 3).—A résumé of the recorded instances, eight in number, and the report of an additional case will be found in this paper.

E. H. G.

9. Eckardt: A Case of Carcinoma of the Cervix in a Maiden of Nineteen (*Archiv f. Gyn.*, XXX., 3).—This case is the fourth on record where carcinoma of the uterus was found under 20 years of age. Glatter and Beigel have each reported an instance at the age, respectively, of 17 and 19, and Rosenstein has described a case of carcinoma of the uterus in an infant 2 years old.

E. H. G.

10. Hofmeier: The Ultimate Result of Operation in Case of Carcinoma of the Cervix (*Zeitschr. f. Geb. u. Gyn.*, XIII., 2).—During the eight years from October 1st, 1878, to October 1st, 1886, 136 partial operations (vaginal and supravaginal) for cancer of the cervix have been performed at the Gynecological Clinic in Berlin, with a mortality of 7.4 per cent; and during the same period, 74 vaginal hysterectomies have been performed, with a mortality of 16.2 per cent. Only those instances which were operated upon up to October 1st, 1885, are utilized analytically in this paper. In this category there are 114 partial operations, 10 dying from the operation, the record in 8 instances being incomplete, and 1 case dying soon of nephritis. Of the remaining 96, recurrence set in within a year in 47. Up to October, 1885, 46 total extirpations were

performed, with a mortality of 12, and recurrence within a year in 13. At the end of one year, 53 per cent of all the operations for carcinoma of the cervix were free from recurrence. The following table shows at a glance the figures in regard to recurrence:

Operation.		Entire number.	Recurrence.	Cure.	Percentage.	Total cases operated upon.
1 year....	Partial.....	96	47	49	51.	114
	Total.....	33	13	20	63.6	46
		129	60	69	53.6	160
2 year.....	Partial.....	84	46	38	46.	102
	Total.....	29	22	7	24.1	43
		113	68	45	40.	142
3 year.....	Partial.....	57	33	24	42.	76
	Total.....	23	17	6	26.	31
		80	50	30	37.5	107
4 year.....	Partial.....	46	27	19	41.3	59
	Total.....	11	11	0	0 0	18
		57	36	19	33.3	77

These cases are further tabulated specifically under the headings, "freedom from recurrence over one year," and "recurrence within one year." From a study of this vast material, H. reaches the following deductions in regard to the prognosis of the individual forms of carcinoma of the cervix: 1. The most unfavorable prognosis as regards rapidity of recurrence is offered by large carcroids of the cervix, especially where they affect gravidæ and puerperæ. 2. The prognosis is relatively good in case of carcinoma of the mucous membrane of the cervix, so long as the substance of the cervix is not entirely invaded. 3. The best prognosis is offered by the cases of primary carcinoma of the cervix, whether it spreads as a papillary tumor towards the vagina, or else as an ulcerating process in the substance of the cervix.

E. H. G.

11. Veit: Endometritis (*Ztschrift. f. Geb. u. Gyn.*, XIII., 3).—The following method of treatment is preferred by V. in case of endometritis: Thorough curetting, preceded where necessary by dilatation of the cervix; washing out the cavity with a solution of carbolic; injecting four to six gm. of tincture of iodine, and repeating the injection every fourth to sixth day, from six to twelve times being the mean number of requisite injections. As a result of this treatment, a normal mucous membrane ordinarily soon reforms, and he has found recurrence of the affection less frequent than after other methods.

E. H. G.

12. A. Czempin: The Relation between the Uterine Mucous Membrane and Diseases of the Adnexa (*Ztschrift. f. Geb. u. Gyn.*, XIII., 2). —The frequency with which disease of the tubes, ovaries, pelvic peritoneum, and cellular tissue follows on disease of the uterine mucous membrane is well known. In this paper, C. calls attention to instances where the reverse held true, that is to say, where affections of the endometrium were secondary to disease of the uterine adnexa. The symptom which directed his attention to such instances was the sudden occurrence of menorrhagia in patients in whom there was no evident disease of the uterine mucous membrane, but in whom there existed one or another of the following affections: 1. Chronic inflammation of one or both ovaries, alone or together with the tubes; 2. Recurrent exudative parametritis; 3. Remnants of pelvic peritonitis, especially such as developed as cicatrices in the remains of the broad ligaments after laparotomy for the removal of the appendages; 4. Certain slowly developing tumors of the adnexa, such as pyo-salpinx, sarcoma, and carcinoma of the ovary. The clinical history of such cases is somewhat as follows: Without previous symptom or causal factor, sudden sharp pain in the back or abdomen sets in, followed in a few days by uterine hemorrhage. On examination, some inflammatory affection of the adnexa is detected. A number of illustrative cases are inserted in this paper. An examination of the mucous membrane of the uterus revealed in some of these cases thickening, and curetted portions, when examined microscopically, corresponded to the various forms of endometritis described by Ruge; in other cases, however, the alterations in the mucous membrane were very slight, there being simply slight thickening, and the microscope revealed only overfilling of the blood-vessels.

From his small number of observations, C. is not able to draw any definite conclusions. Under the influence of disease of the adnexa, hemorrhages from the mucous membrane may occur in two ways: in connection with pyo-salpinx, sarcoma of the ovary, chronic oöphoritis and salpingitis, a hyperplastic endometritis may follow on the induced irritation. In other instances, the explanation may be that an acute or subacute inflammatory affection of the adnexa leads to an arterial congestion, a hyperemia of the mucous membrane, which is kept up by the irritative reflex from the adnexa. Such an irritation is under normal conditions brought to bear, by the adnexa, on the uterus and its mucous membrane, and when these adnexa are diseased, the irritation is, of course, increased. The occurrence of typical or atypical hemorrhages after double oöphoro-salpingotomy C. is not inclined to explain on the usually accepted supposition that they are due to the force of habit. In the instances he has noted, he has found sensitive, exudative masses in the pelvis, and these keep the uterus in a state of congestion which eventually leads to hemorrhages from the mucous membrane of the organ.

E. H. G.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XX.] DECEMBER, 1887. [No. 12.

ORIGINAL COMMUNICATIONS.

AN ERRONEOUS DIAGNOSIS IN A CASE OF ABDOMINAL
PREGNANCY.¹

BY
ANDREW F. CURRIER, M.D.,
New York.

THE observation is sufficiently familiar to be considered trite that "our mistakes are often more instructive than our successes." This does not detract from the force of the observation, however, and I am not aware of any department of medical investigation in which mistakes are more likely to occur than that which includes the diagnosis of all forms of abnormal, more particularly extrauterine, gestation. The field of etiology upon this subject is almost an unexplored one. It is true, we have had speculation in abundance, but while speculation may stimulate to careful and systematic inquiry, *per se* it settles nothing. The theory of Lawson Tait that all extrauterine pregnancies are primarily tubal, and are not diagnosable until rupture of the tube has occurred (see *Brit. Med. Jour.*, Dec. 4th, 1886, p. 1,092, also *Brit. Med. Jour.*, June 28th, 1884, "Five Cases of Extrauterine Pregnancy," etc.), is surrounded with difficulties as a theory, and there are too many recorded exceptions to make it a law. In the case which I am about to narrate, a dissection of

¹ Read before the Obstetrical Section of the Academy of Medicine, September 22d, 1887.

the tube and circumtubal tissue showed no evidence of rupture or abnormality of structure which could have suggested such an hypothesis.

The patient whose history forms the basis of this paper was a native of England, 27 years of age. She had been married between three and four years, and was never pregnant until the abnormal pregnancy occurred which was the principal factor in causing her death.

Until her marriage her health was good, although her family history was decidedly phthisical. She had a well-developed hysterical tendency, and this was very noticeable during the latter portion of her life. In December, 1885, she was seen by a competent gynecologist of this city who diagnosticated retroflexion with fixation and treated her with local applications and vaginal tampons for four months. He then told her that no progress had been made, which so discouraged her that she gave up all medical treatment for a few months. She next suffered from hemorrhages from the bowels, and the physician who then attended her diagnosticated tuberculosis of the intestines. Finally, she came under the care of a third physician who attended her from December 29th, 1886, until her death. This gentleman found her suffering from almost constant pain in the abdomen, cough, and hectic, and occasionally there was vomiting. She was pale, weak, and anemic, pulmonary tuberculosis was suspected. Her menses had always recurred regularly, and the quantity was always large until January, 1887, when it was scanty. At that time, a yellowish discharge appeared and continued at intervals, until the close of her life. She menstruated February 10th, and there was no suspicion that there was anything abnormal about it. There was also severe pain, almost constantly, in the region of the left ovary. Her physician kindly furnished me with the following brief clinical notes :

1887, January 2d. Severe and painful vomiting. A large quantity of urine was passed at frequent intervals during a period of four or five hours, after which the patient was relieved.

3d. The patient had the first good rest for several nights.

4th. There was bleeding from the bowels.

14th. The hemorrhage has continued, at intervals, and the patient was very weak. From this time until January 29th, the patient was comfortable, but upon that day she was seized with severe pain in the abdomen which continued six hours.

February 10th. Menstruated. Vomiting had recommenced after an intermission of several days' duration.

27th. Severe cramps in the region of the womb were complained of. Heretofore the patient had been about her house more or less, but from this time she remained constantly in bed.

March 6th. The cramps were very troublesome ; there was also a profuse leucorrhœal discharge.

25th. The patient has been vomiting almost constantly for

twenty-four hours, and is utterly unable to retain anything upon her stomach. During the evening, she suddenly gave a loud scream and immediately died.

I saw her with her physician on March 12th, after having received a clear history of backward displacement, and such symptoms as are frequently referable to such a cause. It is probable that these conditions tended to bias my judgment in examining the patient, who certainly was not one in whom I could have predicted the probability of pregnancy. She was so weak and sensitive that an examination without an anesthetic was quite unsatisfactory. I drew her to the edge of the bed and readily made out the displaced organ which lay in the posterior half of the pelvis. A bimanual examination could not be made on account of the extreme sensitiveness. The pressure of the uterus upon the rectum and the tension of the vesico-uterine folds accounted, as it appeared to me while I was making the examination, for the disturbance in those organs, and also for more or less of the gastric disorder. There was also a body which could be felt through the right half of the anterior vaginal wall, and which caused quite a depression below the level of the rest of that wall. I was unable to say just what it signified, but thought that it might be an enlarged tube. A very guarded prognosis was given, the opinion being advanced that the patient might get better, and perhaps be very comfortable, but it was not believed that the uterine disorder could be cured. The great mistake consisted in failing to anesthetize the patient and make a careful bimanual examination. There would have been no difficulty in discovering an abdominal tumor, though the determination of its character is another matter. Two weeks afterward, I was greatly surprised to learn that she was dead, and was invited to the autopsy, at which the contents of the abdomen alone were examined. The abdominal muscles having been divided, what appeared to be the thickened and inflamed peritoneum came into view. Upon section, however, it proved to be the wall of a cyst, and the operator, after passing his hand into the abdominal cavity, was not a little surprised to withdraw the hand and arm of a fetus. The cyst was five to six inches long and included in its wall the right broad ligament, tube, and probably the ovary, though no trace of the original structure of the latter could be found. The tube was dissected out entirely, showed no evidence of rupture at any point, and was only of sufficient calibre to admit the passage of a fine probe. The fetal sac lay in front of the uterus, the latter being crowded into the hollow of the sacrum. The sac was attached posteriorly and at its right side by a congeries of vessels and loose tissue to the small intestines which were crowded into the posterior and lower portion of the abdominal cavity. Above the sac the abdominal cavity was almost entirely occupied by the enormously distended large intestine, the sac holding a diagonal position, with its upper extremity extending to the median line. It so encroached upon

the bladder that the ordinary functional distention of the latter must have been very difficult. The fetus was well nourished, nearly filled the cyst, and had probably reached the fifth month of its development. Its breech was at the lower pole of the cyst, the dorsum being anterior. The cyst was principally a development of the broad ligament and did not appear to have any proper lining membrane. It contained no *liquor amnii*, but there was a small rupture at its lower and inner aspect through which that fluid might have escaped. Around the site of the rupture were small collections of recently exuded lymph, while the abdominal cavity contained six or eight ounces of serous fluid, which may have been *liquor amnii* or may have been the result of the inflammatory process. The placenta was attached to the posterior wall of the cyst. The left tube and the ovary were normal, the uterus as large as a good-sized Bartlett pear, and crowded so far back in the pelvis that the cervix could not be reached by the index finger in the vagina, though it had been done with perfect ease two weeks before death. Doubtless this was due, in part, to the *settling* of the structures *post mortem*, the patient having been dead about twelve hours before the autopsy was made. The uterus with its attachments, including the cyst, were dissected out with considerable difficulty, and the specimen removed from the house for the investigation which its great value demanded. The patient's husband insisted upon its return, however; and it was buried with the patient.

Imperfect as is this report, it nevertheless suggests a number of considerations of the highest importance. It shows that abdominal pregnancy does not presuppose tubal dilatation and rupture, as Tait has asserted. (*Brit. Med. Jour.*, June 28th, 1884.)

It sustains the statement of Bozeman (*New York Med. Jour.*, Dec. 20th, 1884, p. 689) and Aveling (*Brit. Med. Jour.*, Dec. 4th, 1885, p. 1,091) that retroversion is a predisposing factor to extrauterine fetation, and adds to the list, which includes the cases of Bache, Emmet, Meadows, Aveling, Thomas (see *Trans. Am. Gyn. Assoc.*, Vol. IX., p. 168), and Bozeman. Bozeman's argument in the matter is not only rational, but it is supported by facts. In the given case, the uterus was neither displaced upwards, forwards, nor laterally, but quite posteriorly, the fetal development being entirely anterior to the uterus, contrary to the rule which Thomas has laid down (*Trans. Am. Gyn. Soc.*, 1882, p. 234).

It is another illustration of extrauterine fetation upon the right side, which seems to me a useful point in making a diagnosis, and one which I have not seen mentioned by any other

writer. In analyzing a large number of cases, I found this situation predominating, if position were referred to at all. Thus, in a list of twenty cases of extrauterine pregnancy, tabulated by D. Berry Hart (*Brit. Med. Jour.*, Dec. 4th, 1887, p. 109), the left side was involved in four, the right in eleven, one was interstitial, one tubo-interstitial, and in three the variety or location was not mentioned. This case also recalls the statement made by Goodell (*Trans. Am. Gyn. Assoc.*, 1882, p. 237): "If, after a long cessation of fruitfulness, or after a long-continued sterility, a woman becomes pregnant, I should at once suspect extrauterine fetation."

It cannot be considered insignificant that this abnormality should occur so frequently among women who have remained sterile during several years of married life, and then have become pregnant.

This case is an extremely suggestive one with reference to the question of treatment. There is no record of the passage of decidual membrane, no evidence of tubal rupture, and, in my opinion, it was abdominal pregnancy from the beginning. Judging from the history which was given, there were no subjective symptoms which could have suggested this condition until the second month was at least half completed. Assuming that a correct diagnosis had been made at that time or even during the third month, the question would have been to operate or not to operate. If the latter horn of the dilemma had been taken, the result, in all probability, would not have differed from that which actually took place. If, on the other hand, a correct diagnosis had suggested operative interference, the question would have been, What form of operation? The choice would lie between electricity and the knife; and, if electricity, should it be galvanism or faradism, for each has its advocates. The high authority of Thomas, whose experience in this matter is unrivalled, at any rate in this country, is absolutely in favor of electricity, and, as he has used both currents, I do not know that he has a predilection in favor of either, to the exclusion of the other. His statement in his second paper upon this subject, published in the ninth volume of *Transactions of the American Gynecological Association* (p. 181) is as follows: "The growing triumphs of abdominal surgery are apt to lead to the conviction that laparotomy should, as a rule, be the procedure of election in these cases. From this view I

unqualifiedly dissent. In the electric current, we appear to have an infanticide agent of reliable character, and as in the woman, as Leopold has proved to be the case in the rabbit, the retained fetus seems to be readily dealt with by the absorbent process of nature, this should, in the early months of pregnancy (I should say up to the fifth month), be preferred to the more radical and dangerous procedure of laparotomy." As to the superior value of one electric current over the other, there are varying opinions.

Theoretically, the contractions which an induced current excites in the thin walls of a tubal or abdominal cyst are dangerous and predispose to rupture: a galvanic current would therefore seem to be desirable both for its dynamic and chemical (*i. e.*, electrolytic) influence. The faradic current has distinguished advocates, however, who have tested its value, as is shown by Garrigues in his report of his case in the seventh volume of Transactions of the American Gynecological Association. The objection of Lawson Tait to this means of treatment, whether on the ground of probable inaccuracy of diagnosis in a given case, or on the ground of sentiment with respect to real or fancied rights of the fetus, do not seem to me to be convincing, notwithstanding they are uttered in very positive terms (see *AMER. JOUR. OF OBSTET.*, Vol. XIX., p. 1,087, and *Brit. Med. Jour.*, Dec. 4th, 1886, p. 1,092). To the objection in respect to diagnosis, the reply would be that every man must decide for himself in accordance with the light which he has, accepting the responsibility for whatever course of treatment he may adopt. To the question as to the right of murdering a child which has escaped from a ruptured tube into the abdominal cavity, I would reply, The right of self-preservation, the physician in this case acting for the mother. What right has the fetus to place the life of its mother and the welfare of perhaps many others "in jeopardy every hour?" What right has the highwayman or the midnight burglar to the consideration of the public when following his profession?

The argumentation upon this subject has been almost entirely one-sided, the fact being apparently overlooked that the mere consciousness of the peril of this condition would be sufficient in many a sensitively organized woman to precipitate a serious or even fatal accident.

But suppose that a current of electricity is used in a given

case, it is not without danger. I have never heard of any means for determining with exactness the volume of electricity or the number of contractions which are sufficient to kill a fetus and stop all development in its surroundings. Janvrin's case of tubal pregnancy, in which the galvanic current was used, was followed by rupture of the cyst and death (Trans. Amer. Gyn. Assoc., vol. XI.), and the operator was Rockwell, who has had large experience in the treatment of such cases. In a case of abdominal pregnancy, for example like that which is here recorded, it is extremely doubtful, at least to my mind, whether the destruction of the fetus can be relied upon as all that is necessary, notwithstanding Leopold's experiments with rabbits. In such a case we do not have a robust individual and active functions to begin with, but a weak and anemic subject from the very time that a correct diagnosis was possible; and when extrauterine development is ended, we still have septicæmia and its contingencies to face. We have avoided Scylla, but we must still pass Charybdis.

As Lusk showed in his admirable paper before the British Medical Association in 1886 (*Brit. Med. Journ.*, Dec. 4th, 1886, p. 1,083), the chances for the formation of lithopedion in these cases of abdominal pregnancy are very small, and such a termination is the one which is to be desired above all others. Cutting operations are the alternative to electricity in the operative treatment of extrauterine pregnancy. Thomas objects to such procedures, except in cases of urgent necessity. Tait advises delay, if a tubal pregnancy has been discovered, until the cyst ruptures, and then an immediate operation. This means constant anxiety to the patient, and perhaps an operation in the presence of shock or collapse. Besides, suppose a Thomas or a Tait is not within hailing distance.

What would be thought of a surgeon who should advise a patient with an operable aneurysm to wait until it ruptured, and then have an immediate operation? To be sure, it might not rupture, and ruptures have occurred without fatal hemorrhage resulting; but could the sword of Damocles have caused more terror and suspense than is excited by an aneurysm or an extrauterine pregnancy? I have somewhere seen a statement attributed to Olshausen—whether accurately or not I cannot say—that any abdominal tumor as large as the fist should be removed. I doubt if Olshausen would propound this as a *hard and fast*

rule, for there are certain forms of uterine tumors which every gynecologist sees which do not cause any particular inconvenience, and for the removal of which there could hardly be a valid excuse.

Lusk's observation (l. c.) seems to me both wise and rational, namely, that the present plan of postponement and expectancy in abdominal pregnancy is not conducive to good results, and his remarks gather convincing power from the statistical tables which accompany them. Janvrin's experience has led him to the belief that positive symptoms of an existing extrauterine pregnancy furnish the indication for immediate laparotomy.

The late Prof. White, of Buffalo, in discussing Reeve's case of extrauterine pregnancy, expressed his opinion as follows: "My own convictions are in favor of immediately relieving the abdomen of this extraneous substance as soon as it is known that the fetus is outside of the uterus." (Trans. Amer. Gyn. Assoc., Vol. IV., p. 322.) In conclusion, while it would obviously be unbecoming in me to formulate any plan of action upon such slender experience, I cannot help the conviction that for such a case as is here recorded, and for many others which resemble it, some more, some less, the best prospects of recovery would be afforded by an early laparotomy; the earlier the better.

Since the foregoing was written, an interesting report of a case of extrauterine pregnancy was read by Dr. Van de Warker, of Syracuse, before the American Gynecological Society, Sept. 15th, 1887. The treatment in this case was the faradic current, which was used on several consecutive days for half an hour at a time without satisfactory result, and then for several days longer, the *séances* being each an hour in duration. Has a method to which such a degree of uncertainty attaches any decided superiority over laparotomy?

In the discussion of this paper, Dr. A. Martin, of Berlin, expressed his preference for the treatment of extrauterine pregnancy by laparotomy, in accordance with the suggestion of Veit, and also stated that, of sixteen cases of this condition in which he had operated, there had been but one death, the patient in that case being already *in extremis* at the time of operation, after rupture of a tubal cyst in the third week of gestation. Martin's position, which is that which is generally held by German gynecologists, should receive consideration in

establishing the rule of practice for this most important as well as most unfortunate condition.

159 E. 37TH STREET.

A CONTRIBUTION TO THE STUDY OF CYSTS OF THE VAGINA,
WITH THE REPORT OF A CASE.

BY

GEORGE WOODRUFF JOHNSTON. A.M., M.D.,

Washington, D. C.,

Lecturer upon Operative Gynecology in the National Medical College; Director of the Woman's Clinic of the Central Dispensary and Emergency Hospital; Member of the Alumni Association of the Woman's Hospital in the State of New York.

(With six woodcuts.)

(Concluded from p. 1144)

At the beginning of this recapitulation of the various theories of origin that have been proposed for cysts of the vagina, certain general divisions or classes were mentioned, under one or the other of which authors have endeavored to arrange all such morbid growths.

As our studies have progressed, it has become apparent, no doubt, how difficult it is to trace back each cyst, no matter how carefully it is investigated, to its true starting-point. We have an almost identical structure in cysts of different kinds, and in cysts of the same kind, unlike constituent elements; further, we have noticed a general resemblance in the mode of formation and in the subsequent history of all such tumors wherever they began.

Between no two species of vaginal cystic enlargements is it so difficult to draw the line as between those which we now approach, called respectively interstitial and peri-vaginal cysts. In the causation of each, the same etiological factors are at work, the starting-point is in the same kind of tissue, the method of formation is the same, and the structural elements identical. It is true that, theoretically, we would find in the wall of the cysts originating outside of the vagina certain tissues undiscoverable in the interstitial variety; but practically

such is not the case. We rarely see these cysts in the beginning of their history, but only after they have grown large enough to attract the attention of the patient; their original structure is then found altered by pressure from within and from without.

Beneath the mucosa of the vagina there lies a submucous layer of loose connective tissue, while outside of the vaginal wall proper there is an environment of fibrous tissue, interwoven here and there with bundles of unstriated muscle fibre. In each of these areas open spaces of appreciable size are to be found, and in each there is a venous plexus, that without being the larger. The physiological changes of pregnancy, the influence of indiscreet or excessive sexual intercourse, the effect of difficult or repeated labors, and many other things beside, produce an enlargement and fusion of these tissue vacuoles with an outpouring and accumulation of fluid therein—a pathological process of which we find the similitude in the formation of bursæ elsewhere. Or, again, there may be an extravasation of blood into the meshes of the submucous or peri-vaginal tissue during pregnancy or labor, although, as has been shown, it may occur independently of these, or, indeed, of any local affection or direct injury.¹ In either case the same changes take place in these fluid accumulations as occur under like conditions in other parts of the body. The contained liquid undergoes certain retrograde alterations, and induces by the irritation of its presence a condensation of the surrounding tissues and the formation of a proper capsule. This latter acquires an inner cellular investment of true or false epithelium or endothelium, as it has been variously termed. In certain cases, presumably when these processes take place rapidly, there is to be found neither distinct encapsulation nor cellular lining of the fluid cavity.

Winckel thinks that the largest number of his fifty cases were cysts of the interstitial variety (believing that they may develop in the muscularis as well as the submucosa), since they were of large size, had thick walls, were distinct from the vaginal mucous membrane, which, in many instances, was freely movable over them, and because, in sixty-six per cent of the total num-

¹ Barnes, Froment. Murray narrates the following case: Female gymnast, æt. 17, fell a distance of ten yards, alighting on her feet. A hematoma appeared on anterior vaginal wall; eight ounces of dark uncoagulated blood drawn off by aspirator.

ber, the tumors were situated in the lower half of the vagina, where, as he avers, even those who maintain that glands exist, have failed to discover them. He also considers that some cysts originate in the peri-vaginal area.

Other authors, among whom may be mentioned Barnes, Breisky, Courty, Froment, Hegar and Kaltenbach, Thalinger, Warren, and Watts, agree that cysts may develop, as has been described, in the cellular tissue beneath the mucosa or surrounding the vagina. But there are certain writers, Eustache, Förster, Levrat, Rokitsansky, and Scanzoni, who go further than this, and maintain that the so-called cysts of the vagina, almost without exception, have their starting-point in the peri-vaginal tissue, and are quite independent of the vaginal wall. Kolaczek, while admitting that circumscribed fluid accumulations may primarily be seated around the vagina, views a dehiscence of the vaginal wall as of doubtful import. Finally, Froment argues that the occurrence of multiple cystomata speaks against an hygromatous origin.

Cases are recorded by Barnes, Beaver, Bradfield, Collardot, Dupuy, Eustache, Gotthardt, Graefe, Hunt, Lee, Mundé, Simpson, and Tillaux, in which a submucous or peri-vaginal origin was considered probable or certain. It may be of interest, from an etiological standpoint, to note that among these patients (13 in number), 7 were said to have borne one or more children; 1 was single; 3 had had sexual intercourse; while 1 was, in all probability, a virgin.

Among those who have written upon the subject of vaginal cysts, Duncan and Gosselin refer to tumors, said to be of this nature, but which are in reality mere hernia-like sacs filled with peritoneal fluid. These at first communicate freely with the cavity of the peritoneum, but, as the result of inflammatory adhesion, become completely shut off, project into the vagina, and may even approach the vulva. A case of "vaginal blood cyst, protrusion through vulva, evacuation, recovery," reported by Cullingworth, seems to be an example of the above condition; it has not been included in our list of vaginal cysts.

A consideration of cysts of the urethra would appear to be beyond the province of the present paper, and yet reference must be made to them, since it has been remarked that many so-called cysts of the vagina are of urethral origin.

Englisch has made a special study of this subject. He found

near the meatus in new-born girls one or more small eminences, retention cysts, resulting from the obstruction of lacunæ or mucous glands of the urethra. If numerous, they remain small; when alone, they reach a larger size. Such a cyst may rupture spontaneously and leave only a slight depression to mark its former seat, or it may expand in the direction which offers least resistance to its growth. Cysts arising in a lacuna, gland, or diverticulum of the female urethra, especially of its floor, present as fluid tumors of the urethro-vaginal septum. Some vaginal cysts at this point may be thus developed.

Among those whom we have already quoted, Hegar and Kaltenbach and Warren express themselves in favor of this latter assumption. Duncan says that sometimes a urethrocele is almost a cyst, there being only a minute communication with the urethra; and Breisky believes that deep-seated and large-sized cysts of the urethro-vaginal septum may possibly originate in a partial dilatation of the urethra, the connection between the diverticulum and this canal first contracting, and finally closing. This, he thinks, needs anatomical demonstration. He refers to Winckel's well-known treatise upon "Diseases of the Urethra and Bladder."

Vaginal cysts of supposed urethral origin are described by Breisky, Hickinbotham, Kolaczek, and Von Preuschen. The inner aspect of the cyst in Kolaczek's case, the only one in which a microscopical examination was made, was found to be invested with a stratified pavement epithelium, strikingly like that which lines the inner surface of the urethra, particularly that part near the meatus. Reference may also be made to Layton's case, details of which are given further on.

Of the many kinds of vaginal cysts, and the probable ways in which the fluid accumulation may begin, a few remain to be mentioned.

De Sinéty and Eustache believe that some of these tumors may be of mucous origin—myxomata—and Bradfield speaks of solid fibrous bodies which pass by inflammatory change into a fluid state. Barnes comments on the resemblance between certain of these vaginal growths and fibro cystic tumors of the uterus, in which the cystic element is especially developed.

Warren and Watts agree that there may be dermoid cysts of the vagina which, Breisky says, arise in the connective tissue outside the peritoneum.

Veit's case: fluid in cyst corresponded with that found in dermoid tumors, yet hair and teeth wanting.

There are two cases of supposed hydatid cyst of the vagina recorded respectively by Burke and Hutchinson.

Contents of Cysts of the Vagina.

Considering the many different sources from which cysts of the vagina may be derived, we are prepared to find great variations in the quantity and quality of the contained fluid. The quantity will of course depend upon the size of the tumor; in most reported cases, only approximate measurements have been made.

It may, we believe, be properly asked if anything is to be learned from an examination of the liquid removed from vaginal cysts. The older observers, as Von Preuschen has pointed out, investigated the contents of these cysts with great care, in the hope of finding something peculiar and characteristic, by means of which their origin could be determined. We know how futile any such attempt is likely to prove.

From our knowledge of this species of morbid growth in other parts of the body, we can at once appreciate what great changes the contents of vaginal cysts would suffer from alterations, chiefly of an inflammatory nature, taking place within the sac, and we may at once assume, therefore, that with the exception of the essential elements of dermoid or hydatid collections, nothing significant of their nature is likely to be found. Indeed, Graefe has shown that the contents of cysts of the same construction may be different, and of dissimilar cysts the same.

A study of the anatomical constituents of the walls of cysts throws but little light upon the etiology of such tumors; an examination of the contained fluid still less; and it is for this reason that we omit entirely any details concerning the contents of vaginal cysts.¹ To one case only will we refer: a unique case described by Layton, in which a calculus was found, that had, in all probability, originated in a cyst of the vagina.

¹ For a discussion of this topic see Breisky, Collardot, Dentu, Froment, Graefe, Hegar and Kaltenbach, Klebs, Schulte, Thalinger, Veit, and Winckel.

Patient, æt. 49, with cancer of cervix uteri. On anterior vaginal wall an ulcerated projection or teat of tissue, the size of a bean. A hard mobile mass, on which finger-nails grated, seemed to be working its way through it from direction of bladder. It projected about one-quarter of an inch. Could not be enucleated with the finger. A few days after examination, while urinating, the mass dropped into vessel: no dribbling of urine thereafter. Proved to be a stone, ovoid; one inch long, $\frac{6.8}{100}$ of an inch in diameter; weight 76 grains; dark colored; without odor; consisted of phosphate of lime, like prostatic and salivary calculi.

Layton thinks this calculus originated in cyst of vaginal wall, possibly due to ossification or calcification of cheesy or dermoid contents. It certainly did not originate primarily in the bladder, for there were no vesical symptoms before, at the time of, or after its discharge, nor could any communication between bladder and vagina be discovered. It was evidently not a foreign body introduced from without which had become encysted. Further than this, the precipitation and crystallization of the inorganic constituents of the fluid in a vaginal cyst would involve no process unlike those which we are accustomed to encounter in cysts elsewhere, nor would the resulting calculus be different. No other instance of this kind has been observed.

We have accepted Layton's interpretation of this case, as we have done that of other authors in regard to the cysts described severally by them. It should not be forgotten, however, that Bourdillat, in his excellent thesis upon "*Calculi of the Urethra and its Neighborhood*," mentions cases observed by Ford, Secieux, Roberts, and Civiale, in which calculi were found in the vaginal wall, near the urethra, and a similar case is recorded by Gibbs, yet in none of them were cysts present.

Schmidt, who examined the stone in Layton's case, considers "that the entire mass is the remains of a racemose gland of the vagina, in the acini of which the inorganic matter was deposited. The specimen examined appears to consist of a number of laminated round bodies, each inclosing a nucleus composed of small round elements, which seem to be the remains of glandular epithelial cells."

3. ETIOLOGY.

There is, of course, no hereditary nor constitutional tendency, no past nor present affection of the general system, that can be

considered as a predisposing or exciting cause of vaginal cysts. In 52 instances in which the age of patients has been noted, 17 were between 20 and 30, 13 between 30 and 40, 12 between 40 and 50, 5 between 10 and 20, 2 between 50 and 60, 2 between 60 and 70, and 1 before 10 years of age. Those physiological changes, diseases, or injuries which directly alter the integrity of the structure of the vaginal wall, or of the tissue immediately surrounding it, can alone be denominated causative agents. We do not refer, of course, in this connection, to cysts which owe their origin to some congenital defect (cases of Breisky and Winckel). Whatever induces a hyperemic, an irritated, or an inflamed condition of the mucous membrane of the vagina on the one hand; or, on the other, through continued friction, crowding, or stretching, causes relaxation with enlargement of tissue spaces in its deeper strata, or in its connective-tissue environment, with an effusion of blood or serum, will set on foot those pathological conditions most necessary to the development of vaginal cysts. We would expect to find cysts of the vagina, therefore, oftenest in those who have been habituated to too early, indiscriminate, or excessive sexual intercourse, in pregnant women, or in such as have borne many children, and in whom labor has been difficult or prolonged; or, finally, in those who have sustained local injuries, independent of coitus or childbirth.

Eustache, Kiwisch, and Thalingier call attention to the fact that prostitutes are particularly predisposed to this form of vaginal growth, and it has been said that cysts are usually seated on the anterior wall, under the symphysis pubis, where friction, during intercourse, is greatest. Courty, indeed, describes bursæ, seen in prostitutes, situated on opposite sides of the vaginal canal, to which the name "*bursæ professionnelles*" has been given. 5 of Winckel's 50 cases were probably public women; while among the 112 added by ourselves, 3 were confessedly prostitutes. How many more were addicted to too early, indiscriminate, or excessive sexual intercourse, it is impossible to say.

Winckel comments upon the effect of pregnancy and labor in the causation of cysts of the vagina. He remarks that, in 12 of 13 cases observed by Huguier, these tumors had originated after pregnancy or labor. Eustache says that 11 of 30 cases collected by Huguier had been delivered, and that the cysts

had appeared during utero-gestation or after confinement. In Winckel's own cases (50), 8 had borne one or more children, while 8 per cent of cysts were due neither to pregnancy nor accouchement.

In 62 of 112 cases which we have collected, 2 were virgins, 3 unmarried women. One single woman and 2 not specified as married had had sexual intercourse, but had not conceived. There were 37 married women, of whom 1 had never borne children. 43 women had been delivered one or more times; 35 had 101 children; 3 were said to have been multiparæ; 4 women had aborted. In 24 instances the cyst was discovered at some time during the period of utero-gestation or at the moment of confinement.

In a few cases, the character of the labor preceding the discovery of the cyst is described, but we fail to acquire any information thereby.

Other definite etiological features are mentioned by Eustache, namely, enormous size of the male sexual organ, and the irritation produced by a prolapsed uterus. He describes a case in which a cyst was supposed to be due to an injury done to the vaginal wall by a syringe, and another, to a blow on the perineum.

Such a length of time may elapse between the activity of the real causative factor and the recognition of the tumor that it is impossible to say when or why cystic formation began. The co-existence of other pathological conditions predicates no causal relation whatever.

In conclusion, if we may be permitted to judge from our own limited experience, the etiological influences above enumerated do not seem to be so very potent.

Since this paper was begun, we have examined carefully and repeatedly in the Woman's Clinic of the Central Dispensary 500 patients, who had either borne children, were addicted to early, promiscuous, or excessive sexual intercourse, or were notoriously prostitutes, and often all three conditions were present in the same individual. A very large proportion of this number were suffering from some form, either direct or remote, of venereal infection, while nearly every variety and grade of traumatism and inflammatory change which can be met with in the female genitalia here found an illustration.

We have not been able, so far, to add one case to that upon which this paper is founded.

4. SYMPTOMATOLOGY.

Cysts of the vagina are, as a rule, of no great clinical importance. Unless they are large, the patient may remain entirely ignorant of their existence, and discovery is purely accidental. Indeed, even when she is cognizant of their presence, they may give rise to so little disturbance that operative interference is deemed unnecessary, or, if proposed, is declined. Eustache cites the case of a prostitute with this affection who, in spite of her manner of life, was so little incommoded that she desired no operation.

As vaginal cysts are tumors of slow growth, the disturbances of sensation and of function which they cause are slight at first and become manifest but slowly.

It is often said that the symptoms which led to an examination and the discovery of the cyst began at this or that time, before or after a certain childbirth. Yet if we examine carefully into each case, we will find that the symptoms in question are evidences of some other disease or some injury of the genitalia, and that they are of a character to mask any disturbances that the cyst, of itself, could call forth. The growth is, in such cases, a co-incident, but not the all important pathological condition.¹ Indeed, if all the subjective symptoms attendant upon cysts of the vagina are present in typical array, they are so little characteristic that they indicate solely the existence of some, it may be, purely functional, affection of the female sexual apparatus.

The subjective symptoms which result more or less directly from the presence of vaginal cyst may be classified as follows: 1st. Sensations of pain and tenderness in the tumor, commonly present only in cases of irritated or inflamed cyst; and 2d. Interferences with function, of a mechanical nature, dependent on pressure and traction.

In 9 cases, from among those collected by ourselves, there was neither pain nor tenderness in the tumor. In Gosselin's case there was pain, but the cyst was said to have been more of an incommodity than a cause of suffering. In Tillaux's case, in

¹ Kaltenbach's case, in which there was a lacerated cervix, enlarged and retroverted uterus, prolapse of the posterior vaginal wall, etc. K. says the principal suffering of patient was due to size and dislocation of uterus, and stretching of broad ligaments.

Layton's case, with symptoms of carcinoma of cervix uteri.

The author's case.

which the growth was carried twenty-two years, it became painful only after inflammation had occurred. In Dentu's case, there was no pain, in spite of inflammation and suppuration of the sac. In several instances, a feeling of fulness, weight, tensity, or pressure in the vagina or region of the perineum was observed; while in others, vague pains and morbid sensations in the hypogastrium, thighs, etc., not in all cases directly ascribable to the tumor, were present. If the cyst is large or prolapsed, there may be, besides, symptoms such as those which accompany an enlarged or prolapsed uterine body—bearing-down pains, dragging, and the sensation of the descent and escape of something from the vagina.

Cysts often act as foreign bodies in the vagina and produce an irritated and inflamed condition of the mucous membrane, or aggravate and maintain such a state if already present. Thus a leucorrhœal discharge is said frequently to accompany this affection.¹

Cysts may interfere with the function of micturition, of defecation, and of menstruation, although the effect upon the last may be considered somewhat questionable. Urination may become frequent, painful, difficult, or impossible; or there may be vesical tenesmus. In 9 cases, symptoms referable to the urethra or bladder are to be observed. It is noteworthy that, among them, the cyst was situated on the anterior vaginal wall 5 times; on the posterior, twice; on the lateral, once; while in one instance two cysts were present, one on the anterior, the other on the posterior wall of the vagina. In two cases of cyst of the anterior wall, in another where the posterior wall was affected, and in two where the seat of the tumor was on the lateral wall, it is remarked that micturition was not interfered with.

In one instance of cyst of the posterior, and in one of cyst of the anterior vaginal wall, defecation is said to have been difficult; while in one of the posterior, and another of the lateral wall, no trouble of this kind was experienced.

Cases are recorded in which, during the development of the cyst, menstruation became, in one, too frequent and profuse; in another, prolonged and painful; and again, in a third, disturbed. In one instance, the obstruction furnished to the escape of the

¹ Näcke observed no fluor albus in six cases of vaginal cysts in pregnant women.

menstrual discharge from the vagina by two tumors, one on the anterior, the other on the posterior wall, was said to have been the cause of the dysmenorrhea from which the patient suffered.

All of these functional derangements to which we have alluded are accentuated—indeed, in some instances, are only manifest—when the cyst is large; during the general pelvic congestion accompanying the menstrual epoch; after standing, walking, or other exercise; or, finally, when the cyst becomes prolapsed, or, from this or other causes, protrudes through or beyond the vulvar fissure. Then, locomotion and rest in the sitting posture are alike unpleasant or impracticable, and we are told that in one case the woman had to restore the tumor to the vagina with the finger before she was able to work.

As would be supposed, cysts of the vagina afford more or less of an impediment to coitus, so that the sexual act is often made difficult, painful, or impossible. This is noted in 10 cases, in which the cyst was seated on the anterior wall of the vagina 5 times; on the posterior, 4 times; while in one, a tumor was present on both the anterior and the posterior wall. In three instances, in all of which the cyst was situated on the posterior wall of the vagina, sexual intercourse was undisturbed. In the case of the prostitute reported by Eustache, the tumor, in all probability, was easily elevated on the introduction of the male sexual organ.

We know that vaginal cysts are not commonly regarded as causes of sterility—of our own cases more than one-fourth were pregnant women—and we are distinctly told that conception has occurred in one instance twice, and in another four times, after the presence of a cyst in the vagina had been determined. Yet Grynfeldt records a case in which a cyst filled up the posterior cul-de-sac of the vagina, and produced an aggravated condition of uterine anteversion. The woman was sterile, and he, unable to find any other cause, evacuated the cyst with the happiest results; the uterus returned to its normal position, and fecundation occurred a short time thereafter.

It happens now and then that occasions arise which make one doubt the correctness of the words that preface these brief remarks upon the symptomatology of cysts of the vagina. Such tumors are occasionally of considerable clinical importance. Among our own cases, labor was complicated by their

presence twenty-one times.¹ In many, excluding those in which the cyst was evacuated before labor began, delivery was unimpeded, either on account of the small size of the growth, or because of its being soft, yielding, or movable, or when rupture and emptying of the sac resulted from the pressure of the descending fetal extremity.²

But such a fortunate termination to utero-gestation is not invariably to be anticipated. Labor may be prolonged, and indeed, may become difficult or even impossible until the cystic sac is punctured or incised, its contents evacuated, and the obstruction to the passage of the child is thus removed.³

In ten of these twenty-one cases, a cyst of the vagina produced an abnormal labor.

5. DIAGNOSIS.

Under ordinary circumstances, the recognition of cysts of the vagina is easy.

Women who suffer from this malady not infrequently imagine that they have a descent of the womb; the presence of an unusual enlargement in the vagina, at the vulva, or between the thighs creating this belief. Occasionally, at the first glance, the swelling of the vaginal wall suggests to the mind of the examining physician a cystocele, urethrocele or rectocele; and indeed the resemblance is often very striking. On careful inspection, however, the mucosa covering a cyst is found to be smooth and shining, while in the other conditions it is thickened and wrinkled. Digital examination of the vagina and rectum, and the employment of the bimanual method, will do much to clear up the diagnosis. In many instances, a sound has been introduced into the urethra and bladder, and the endeavor has been made to feel its tip through the anterior wall of the vagina, in the recognition of cysts of this locality; or the effect of catheterization on the size and tensity of the tumor has been observed. Furthermore, the

¹ Cases of Bidder and Wassily, Burke, Dupuy, Fürst, Hickinbotham, Ingleby, Lee, Lever, Moliner, Munde, Näcke, Pinchancourt, Porak, Schulte, Warren.

² Cases of Bidder and Wassily; Moliner, cyst size of small pear; Pinchancourt, hen's egg; Warren, hen's egg.

³ Burke; Dupuy, cyst was voluminous; Fürst, goose egg; Hickinbotham, large; Ingleby, filled pelvis; Lever, Munde, small orange; Näcke, hazelnut; Peters, child's head at term; Schulte, fist.

urine, withdrawn from the bladder by catheter, and the fluid withdrawn from the cyst by puncture, have been compared.

In cysts of the posterior wall, it is to be observed that the size of the tumor is not diminished after defecation, and that an enlargement in the vagina, due to an accumulation of feces in the rectum, is irregular and not circumscribed, and retains an impression made by the finger; while a cyst is elastic and resilient. Dealna, in an interesting study of retro-rectal cysts, shows that the posterior wall may be pushed forward by such tumors.

Duncan refers to the almost solid feeling that cysts sometimes have. Collardot records a case in which a fibroma was found attached to the anterior vaginal wall; it was soft, yet without distinct fluctuation, like a cyst with tense, rigid walls. Gosselin resorted to explorative puncture to determine whether a tumor of the vagina was solid or liquid.

It is easy to distinguish cysts of the vagina from polypi depending from the uterus.

With pelvic hematocele and pelvic abscess, with tumors and prolapses of the ovary and Fallopian tube, cysts of the vagina are not readily confused. The history of the case, sensitiveness on pressure, and the absence of any tendency to pediculization, distinctly mark out abscesses of the vesical or rectal tissues.

Perhaps the greatest difficulty is found in distinguishing cysts of the vagina from vaginal herniæ, and from cysts of the vulvo-vaginal glands or their ducts. In regard to the former, it has been observed that in vaginal cysts there is no impulse on coughing; they simply become more prominent, are forced down along with the whole of the pelvic contents, are dull on percussion, and irreducible. From cysts of the glands of Bartholin, cysts of the vagina may be differentiated by the fact that the latter originate invariably within the vagina, at a point more or less removed from the labia minora.

In spite of the apparent ease with which cysts of the vagina are said to be recognized, the most curious and unaccountable errors in diagnosis have occasionally been made, and pessaries and tampons have been inserted and worn, when the prick of a needle would have made the apparent prolapse disappear.¹

¹ Beaver's case. Diagnosis of a simple prolapse was made by several physicians.

Eustache's first case. Vulva was opened by a small tumor which was

We agree with Mundé that the diagnosis of cysts of the vagina is usually easy, and only gross negligence could lead to the mistakes that have been enumerated.

6. PROGNOSIS.

Cysts of the vagina are, of course, tumors of a benign nature and, as Eustache has with justice remarked, do not constitute a genuine malady, but rather an infirmity. They can, at most, interfere with function only; sometimes delivery may be seriously impeded by their presence. Klebs, believing, as he does, in the origin of cysts from dilated lymph-vessels, says that progressive lymphangiectasis may develop in consequence of these growths, and the subsequent incomplete involution of the lymph-vessels cause danger in later pregnancies.

7. TREATMENT.

Operation is unnecessary in every case of cyst of the vagina.

For those tumors that are large and cause trouble, there is no choice; and in young women it is best to interfere, even when the growth is small and produces no symptoms, for future difficulty and danger may be thus avoided. When a woman is entering upon the period of sexual repose, unless she is annoyed or suffers, the presence of the cyst should be disregarded.

Surgical procedures may be instituted at any time. In some instances, the operation has been performed during pregnancy, without there being any interruption in utero-gestation; or just before or during labor, either because the cyst is then recognized for the first time, or since it offers, or seems likely

taken for a descent of the womb; for this woman wore a pessary for two months.

Eustache's second case. Projection from the vulva taken by physician for a prolapse of the vagina; treatment by tampons; woman got worse and physician thought she had a prolapsus of the uterus.

Gotthardt's case. Cyst projected between labia; midwife made diagnosis of prolapsus, and tried for its relief sponges, tampons, and pessaries.

Graefe's case. Cyst of the posterior wall; pessaries have been repeatedly inserted, but always fall out again.

Tillaux's case. Woman consulted physician, who, thinking she had cystocele, advised pessary.

to offer, an impediment to delivery.¹ An almost countless number of operative methods have been proposed and practised, alone or in combination. There is some choice among them : that which is easiest of performance, freest from suffering or danger, and most likely to be radical in its results, is to be preferred. Especially in private practice do we desire to avoid the necessity of repeated attempts at cure.

The following plans of treatment are to be enumerated :

I. Simple Puncture.—Puncture of the cyst and the withdrawal of the contained fluid is useful as a diagnostic resource, and answers very well in the treatment of very small and superficially located tumors ; but inflammation may be caused thereby, or the punctured opening may close, and the secretion re-accumulate. This plan of treatment was pursued in 25 of 162 collected cases : 12 cysts refilled ; 3 completely disappeared ; partial cure followed in 5 ; result not specified in 5.

II. Puncture, followed by the injection of an irritating fluid—tincture of iodine, carbolic acid, etc.—We seek by the injection of some irritating fluid into the sac to create an adhesive inflammation of its walls, and a consequent obliteration of its cavity. This plan of treatment is generally recommended, and is preferred to all others by many authorities. It is not always satisfactory in its results, being rendered entirely useless when inflammation already exists, and is apt to be followed, especially in deep-seated cysts, by a too active and a too extended inflammatory reaction. This procedure has been employed on seven occasions : 4 cures ; 1 improvement ; 2 results not specified.

III. Simple Incision.—Cysts may be incised in the long axis of the vagina or in a crucial manner, with the knife or actual cautery, care being exercised not to pass beyond the limits of the tumor and wound any of the adjoining hollow viscera or the peritoneum. A finger in the rectum or a sound in the bladder may be used as guides. Simple incision may suffice, but is not always effective. In 162 cases, simple incision was practised in 13, with 8 cures ; 2 cysts refilled, and the result is not stated in 3 cases. In 1 instance, the cyst-walls were firmly approximated by deep sutures, and in 2 venous hemorrhage followed the operation.

¹ Cases of Bidder and Wassily, Betz, Burke, Ingleby, Lever, Mundé, Nücke, Porak, Peters.

IV. Incision, followed by an effort to alter or destroy the lining membrane of the sac.—After incision of the vaginal aspect of the cyst-wall, applications of iodine, carbolic acid, nitrate of silver, the actual cautery, and tampons of cotton, charpie, etc., have been employed to alter or destroy the secreting membrane lining the sac, and set on foot inflammatory processes. The immediate object sought is usually achieved, but the subsequent cicatrization is often incomplete, the cyst-cavity communicating with the vagina by a suppurating track. In our own cases, this course was followed 6 times, with 1 failure. In 5 instances, the sac became obliterated after a shorter or longer period of suppuration. In one case, incision was followed by scraping of the interior of the sac.

V. Incision of the cyst, followed by excision of the borders of the wound, or removal of a part, or the whole, of the projecting portion of the sac.—This is a simple and effective procedure, but is not infrequently accompanied or followed by sharp hemorrhage. In large, thick-walled cysts, this method is particularly applicable. It has been employed in 9 cases, with good results in 7. In 1 it failed; in 1 the opening had to be subsequently enlarged; and in 1 there was enough hemorrhage to make a tampon necessary.

VI. Excision of the whole or a part of the cyst-wall, followed by the application of some irritant to its interior.—This mode of treatment, like some that have gone before, in which the effort is made to establish inflammation in the sac with an adhesion of its walls or an obliteration of its cavity by granulation and cicatrization, is generally followed by disappearance of the cyst, yet there are many objections to its employment. It is painful, frequent applications are often necessary, serious inflammation of the surrounding tissues may be caused, suppuration is prolonged, and a cicatrix is left behind. More suffering is occasioned the patient than was experienced from the presence of the tumor. In 19 instances, recovery was thus effected.

VII.—Enucleation or extirpation of the entire sac has been attempted.—This is a somewhat laborious undertaking in large, thick-walled, and deep-seated tumors; the rupture of the cyst, which usually occurs, and the accompanying hemorrhage, add not a little to the difficulties of the operation. In many instances, the attempt at extirpation has been abandoned in favor of some other simpler procedure. If it is successful, the edges

of the resulting wound may be approximated by sunk and superficial sutures, and drainage provided for at its lower angle. This operation is difficult and sometimes dangerous, and has no compensating advantages. Duncan characterizes it as an example of surgical greed.

In 162 cases, extirpation was undertaken 24 times, with 2 complete and 4 partial failures. It was accompanied by hemorrhage, requiring ligature, 5 times; was followed by consecutive or secondary hemorrhage, 4 times, and by peritonitis and death, once.

VIII. Schröder's Operation.—We have placed at the last that which may be considered, by all odds, the best operation for those cysts which cannot be cured by puncture or incision.

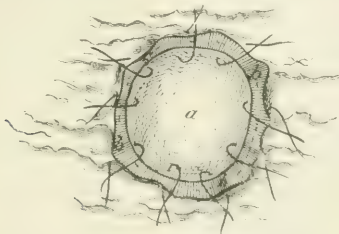


FIG. 6. (After Schröder.)

The operation consists in the removal, by scissors, of all that part of the tumor that projects above the surface of the vagina, and the union, by sutures, of the vaginal mucous membrane to the mucous membrane lining the cysts. Thus the sac is turned into the vagina. The epithelium, which invested the inner surface of the sac, is soon indistinguishable from that which covers the rest of the vaginal mucous membrane, the cup-shaped cavity becomes flattened out, and no trace of the tumor remains. This manner of operating has been recommended by Hegar and Kaltenbach, and has been adopted by Veit and ourselves.

IX.—There remain to be mentioned: ligature and section in pediculated cysts, through drainage, and the seton.

Altogether, in 112 cases of cyst of the vagina, 75 operations were performed. In 2 of these, there was hematuria for a few days after the operation, and in 1 cystitis; 2 cases terminated

fatally. In one of these, a cyst, seated in the posterior cul-de-sac (fornix) of the vagina, was removed, and, although the peritoneum was not injured, a fatal peritonitis resulted. In the other, solid nitrate of silver was twice applied to the interior of the sac, and the edges of the wound subsequently excised; here also peritonitis followed.¹

Ether is said to have been employed four times and cocaine was twice used.

LITERATURE.

ASHWELL. A Practical Treatise on the Diseases Peculiar to Women. London, 1848, 750.

BARNES. A Clinical History of the Medical and Surgical Diseases of Women, 2d American edition. Phila., 1878, 759.

BEAVER. A case of a rare form of Vaginal Cyst. Med. and Surg. Reporter, Phila., 1885, liii., 309.

BECK. Tumors of the anterior Wall of the Vagina. Tr. Indiana M. Soc., Indianapolis, 1880, xxx., 100.

BEIGEL. Zur Entwicklungsgeschichte des Wolff'schen Körpers beim Menschen. Centralbl. für die med. Wissenschaften, Berlin, 1878, 481.

BERGER. Archives de Tocologie. Paris, 1884, ii., 163.

BETZ. Zur Kasuistik und Therapie vaginaler Kysten. Memorabilien, Heilbronn, 1870, iii., 67.

BIDDER AND WASSILI. Aus der Gebäranstalt des Kaiserlichen Erziehungshauses. St. Petersburg, 1874, viii., 205. Also, Schmidt's Jahrbücher. Leipzig, 1876, clxxii., 214.

BÜHM. Ueber Erkrankung der Gärtner'schen Gänge. Archiv für Gynaekol., 1883, xxi., 176.

BOULEY. Kyste hydatique multiloculaire du petit bassin: adhérences multiples avec les organes avoisinants, intestins, utérus, vagin, etc.; adhérence de la vessie et incontinence d'urine: obliteration presque complète du vagin. Progrès méd., Paris, 1881. ix., 775.

BOURDILLAT. Calculs de l'urèthre et des régions circonvoisines. Paris Thesis No. 226, 1869. Also, Archives générales de méd., Paris, 1870, xv., 764.

BRADFIELD. Vaginal Cysts. American Journal of the Med. Sciences, Phila., 1882, n. s. lxxxiii., 433.

BRAUN. Pemphigus des Gebärmutterhalses. Zeitschr. der k. k. Gesellsch. der Aerzte in Wien. Medizinische Jahrbücher. Wien, 1861, xvii. (ii.), 182.

BREISKY. Gynécologische Mittheilungen; Medicinisch-pharmaceutischer Bezirksverein des bern. Mittellandes. Correspondenz-Blatt für Schweizer Aerzte, Basel, 1875, v., Nr. 14, 430.

BREISKY. Die Krankheiten der Vagina. Handbuch der Frauenkrankheiten (Billroth), Stuttg., 1879, siebenter Abschnitt, 130.

¹ In both these fatal cases, the cyst originated posteriorly in the vagina, and was operated upon by Raynaud. It is not the same case twice described, for the account of one appeared two years before the specimen of the other was presented.

BURKE. Case of labor obstructed by an hydatid cyst in the Vagina. Austral. M. J., Melbourne, 1880, n. s. ii., 42.

CHAUVEAU. The Comparative Anatomy of the Domesticated Animals. London, 1873, 886.

CHÉNEVIÈRE. Einige Fälle von Colpohyperplasia cystica. Archiv für Gynaekologie, Berlin, 1877, xi., 351.

CHEVALET. Extirpation d'un petit kyste du cul-de-sac vaginal; péritonite; mort. Bulletins de la Société Anatomique de Paris, Par., 1874, 2e série, xvii., 117.

CHUDORSKI. Kuchenion o Kistach rukawa. (On Vaginal Cysts.) Med. Vestnik, St. Petersburg., 1879, i., 11.

CHURCHILL AND LEBLOND. Traité pratique des Maladies des Femmes. Paris, 1881, 172.

COBLENZ. Zur Genese und Entwicklung von Kystomen im Bereich der inneren weiblichen Sexualorgane. Arch. für path. Anat., etc., Berlin, 1881, lxxxiv., 26.

COLLARDOT. Des Kystes du Vagin. Paris Thesis No. 59, 1881.

COSTE. Corps de Wolff chez la brebis. Ann. franç. et. étrang. d'Anat. et de Physiologie, Paris, 1839, 326.

COURTY. Traité pratique des maladies de l'Uterus, des Ovaires et des Trompes, etc., contenant un appendix sur les maladies du Vagin et de la Vulve. 3e éd. Paris, 1881, 2e partie.

CULLINGWORTH. Vaginal blood-cyst; protrusion at vulva; evacuation; recovery. Obst. J. Gr. Britain, London, 1879, vii., 438.

DEAHNA. Retrorectale Cyste. Archiv f. Gynaek., Berlin, 1874-5, 305.

DENTU. Kyste du Vagin. Gaz. des hôp., Paris, 1880, liii., 812.

DE SINÉTY. Tumeurs du Vagin—

Kystes. Manuel Pratique de Gynécologie et des Maladies des Femmes. Paris, 1879, 164.

DOHRN. Ueber die Gärtner'schen Kanäle beim Weibe. Archiv für Gynaekol., Berlin, 1883, xxi., 328.

DOHRN. Zur Kenntniss der Müller'schen Gänge und ihrer Verschmelzung. Schriften der Gesellschaft zur Beförderung der gesammten Naturwissenschaften zu Marburg. Marburg u. Leipzig, 1872, ix., 251.

DORAN. Coblenz on the embryological origin of Uterine and Vaginal Cysts. London M. Rec., 1882, x., 81.

DRESCH. Des Kystes du Vagin. Paris Thesis No. 277, 1872.

DUNCAN. Clinical Lectures on Tumors and Cysts of the Vagina and Pudenda. Med. Times and Gaz., London, 1880, i., 85.

DUPUY. Les Kystes du Vagin. Gaz. Obstet., Paris, 1876, v., 121.

EDWARDS. Leçons sur la Physiologie et l'Anatomie comparée etc. Paris, 1870, viii., 510. et ix., 68.

ENGLISCH. Ein Fall von einer Cyste in der Wand der weiblichen Harnröhre, mit Bemerkungen über die Entwicklung derselben. Wien. Med. Presse, 1881, xxii., 599; 634.

EPPINGER. Sectionsergebnisse an der Prager pathologisch-anatomischen Anstalt. Vierteljahrsschr. für die Praktische Heilkunde, Prag, 1873, cxx., 32.

EPPINGER. Emphysema Vaginae. Beiträge zur pathologischen Anatomie der menschlichen Vagina. Zeitschr. f. Heilk., Prag, 1880, i., 369.

EUSTACHE. Des Kystes du Vagin. Montpellier Médical, Mont. et Par., 1870, xxiv., 499.

EUSTACHE. Mém. sur les Kystes

du Vagin. Archives de Tocologie, Par., 1878, v., 191 ; 255.

FISCHEL. Beiträge zur pathologischen Histologie der weiblichen Genitalien. Archiv f. Gynaekol., Berlin, 1884, xxiv., 119.

FÖRSTER. Handbuch der speciellen path. Anat. Leipzig, 1854, 328.

FREUND. Zeitschr. f. Geb. u. Gyn. Stuttg., 1876, i., 242.

FREY. Compendium of Histology. New York, 1876, 180.

FRITSCH. Cysts of the Vagina. The Diseases of Women, N. Y., 1883, 99.

FROMENT. Etude sur les Kystes du Vagin. Paris Thesis No. 112, 1879.

FÜRST. Einige Fälle von Geschwülsten der äusseren Geschlechtstheile : iii. Vorgefallene Scheidencyste — Operation — Heilung. Archiv f. Gynaekol., Berlin, 1886, xxvii., 110.

GALLARD. Leçons cliniques sur les maladies des Femmes. 2e éd., Par., 1879, 106.

GÄRTNER. Anatomisk Beskrivelse over et vednogle Dyr-Arters Uterus undersøgt glandulöst organ. Kopenhagen, 1827.

GIBBS. Trans. Path. Soc. of London, 1854, v., 235.

GOSELIN. Kystes Vaginaux. Diagnostic des tumeurs du Vagin. Revue de therap. méd. chirurg., Par., 1878, xlv., 507.

GOSELIN. Kyste folliculaire profond du Vagin. Gaz. d. hôp., Par., 1878, li., 1089.

GOTTHARDT. Cyste der Vagina, Heilung durch Operation. Beiträge zur Gynäkologischen Kasuistik. Wien. Med. Wochenschr. Wien, 1869, Nr. 94, 1560.

GRAEFE. Zehn Fälle von Vaginal-Cysten. Zeitschr. f. Geburtsh. u. Gynäkol., Stuttg., 1882, viii., 460.

GUÉRIN. Maladies des Organes

Génitaux Externes de la Femme. Paris, 1864, 429.

HART AND BARBOUR. Cysts of the Vagina. Manual of Gynecology, Edinburgh, 1886, 504.

HAUSSMANN. Ueber die erste Beobachtung von Cysten der Scheide. Geschichtliche Bemerkung. Archiv für Gynaekologie, Berlin, 1875, viii., 533.

HEGAR AND KALTENBACH. Operationen bei Scheidencysten. Die Operative Gynäkologie, Stuttg., 1886, 136, 777.

HEINELT. Zur Casuistik, Symptomatologie und Therapie der Scheidentumoren. Greifswald, 1880, C. Sell, 37 pp., Svo.

HEITZMANN. Spiegelbilder der gesunden und kranken Vaginalportion und Vagina. Wien, 1883, 1.

HENLE. Handbuch der Eingeweidelehre der Menschen. Braunschweig, 1866, 450.

HENNIG. Der Katarrh der inneren weiblichen Geschlechtstheile. Leipzig, 1862, 28.

HENNIG. Ueber Drüsen der Vagina. Archiv f. Gynaekol., Berlin, 1877, xii., 488.

HICKINBOTHAM. Labor in a primipara complicated by a large urethral cyst and by prolapsus uteri; delivery by cephalotripsy; subsequent operation; recovery. British M. J., Lond., 1882, i., 613.

HÖNING. Grosse Cyste der Bartholin'schen Drüse. Monatschr. f. Geburtsk., etc., Berlin, 1869, xxxiv., 130.

HÖRDER. Arch. f. Gynäkol., Berlin, 1876, 324.

HÜCKEL. Anatomische Untersuchungen über Colpohyperplasia Cystica. Arch. f. path. Anat., etc., Berl., 1883, xciii., 204.

HUNT. AMERICAN JOURNAL OF OBSTETRICS, etc., N. Y., 1876, ix., 631.

HUTCHINSON. Tumor in lower part of abdomen discharging itself at intervals per vaginam. *British Med. Journ.*, Lond., 1862, ii., 296.

INGLEBY. Facts and Cases in Obstetric Medicine. London, 1836, 129.

JAKESCH. Ein Fall von Selbstentwicklung mit lebender Frucht bei gleichzeitig vorhandener Kolpohyperplasia Cystica. *Prag. med. Wochenschr.*, Prag., 1877, Nr. 13, 253, u. Nr. 14, 280.

JOULIN. Pempyhus du col utérin. *Gaz. des hôp.*, Paris, 1861, 158.

JOULIN. Pempyhus des Gebärmutterhalses. *Zeitschr. der Gesellsch. der Aerzte in Wien*, 1861, xvii. (ii.), 182.

KALTENBACH. Zusammengesetzte Cyste der Scheide. *Arch. f. Gynaekol.*, Berlin, 1873, v., 138.

KLAUSER AND WELPNER. Chemische Analyse des Gasinhaltes bei einem Falle von Colpohyperplasia Cystica (Winckel). Vaginitis Emphysematosa (Zweifelh). *Centralbl. f. Gynäk.*, Leipzig, 1879, iii., 337.

KLEBS. Cystenbildung. *Handbuch der patholog. Anat.*, Berlin, 1876, i., 964.

KLEINWÄCHTER. Ein Beitrag zur Anatomie und Pathologie des Vestibulum Vaginae. *Prag. med. Wochenschr.*, Prag, 1883, viii., 81.

KLOB. *Patholog. Anat. der weiblichen Sexualorgane*. Wien, 1864, 430.

KOCKS. Ueber die Gärtner'schen Gänge beim Weibe. Berlin, 1882, xx., 487.

KOLACZEK. Ein Fall von sog. Vaginalcyste. Beiträge zur Geschwulstlehre. *Archiv für klin. Chirurgie*, Berlin, 1875, xviii., 346.

KÖLLIKER. *Embryologie de l'homme*, etc. Paris, 1882, 986.

KUSSMAUL. Von dem Mangel,

der Verkümmernng und Verdopplung der Gebärmutter, etc. Würzburg, 1859, 5.

LAYTON. History of a phosphatic calculus spontaneously expelled from a cyst of the anterior vaginal wall. *New Orleans Med. and Surg. Journ.*, 1878-9, n. s., vi., 101 (also reprint).

LEBEDEFF. Ueber die Gaseysten der Scheide. *Arch. f. Gynaekol.*, Berl., 1881, xviii., 132.

LEBEDEFF. Beitrag zur Lehre über Vaginalcysten. *Zeitschr. f. Geburtsh. u. Gynäk.*, Stuttg., 1882, vii., 324.

LEE. Cystic Tumor of Vagina removed by Extirpation. *AM. J. OF OBST.*, etc., New York, 1878, xi., 116.

LEVRAT. Tumeurs du Vagin—Kystes. *Nouveau dict. de méd. et de chirurg. prat.*, Paris, 1885, xxxviii., 179.

LEVER. Encysted tumors of Vagina. Observations on pelvic tumors obstructing Parturition. *Guy's Hospital Reports*, Lond., 1842, vii., 130.

LÖWENSTEIN. *Centralbl. für die med. Wissensch.* Berlin, 1871, Nr. 35, 546.

LUSK. Gaseous Tumor of Labium. *AM. J. OF OBSTET.*, etc., N. Y., 1880, xiii., 389.

MAGNIN. Kyste du Vagin; rupture spontanée au 7e mois d'une grossesse; pas d'accidents. *J. de méd. et clin. chirurg. prat.*, Paris, 1883, liv., 164.

MOUTARD-MARTIN. *Archives de Tocologie*, Paris, 1884, ii., 163.

MEISSNER. Krankhafte Zustände der Mutterscheide. *Canstatt's Jahresbericht*, Erlangen, 1848, iv., 229.

MOLINER. Kyste du Vagin pendant la Grossesse. *Rev. méd. de Toulouse*, 1882, xvi., 239.

MUNDÉ. Case of Cyst of the Vagina. AM. J. OF OBSTET., etc., N. Y., 1877, x., 673.

MURRY. A case of Hematoma of the Anterior Wall of the Vagina. Medical Times, Phila., 1877, 539.

NÄCKE. Ueber die sogenannte Colpohyperplasia Cystica. Archiv f. Gynaekol., Berlin, 1876, 461.

NÄCKE. Einige neue Fälle von Vaginalcysten. Deutsche Zeitschr. f. prakt. Med., Leipzig, 1876, iii., 77.

NOEGGERATH. AM. J. OF OBSTET., etc., N. Y., 1879, xii., 610.

OBEDIECK. Ueber Epithel u. Drüsen der Harnblase, etc. Preisschrift, Göttingen, 1884.

PETERS. Eine Cystengeschwulst der hinteren Vaginalwand als Geburtshinderniss. Monatschr. f. Geburtstk., Berlin, 1869, xxxiv., 141.

PICHANCOURT. Kyste de la paroi recto-vaginale. Union méd. et scientifique du Nord-est, Reims, 1880, iv., 134.

PORAK. Archives de Tocologie. Paris, 1884, ii., 163.

VON PREUSCHEN. Die Cysten der Vagina. Centralbl. für die med. Wissensch., Berlin, 1874, xii., Nr. 49, 773.

VON PREUSCHEN. Ueber Cystenbildung in der Vagina. Archiv f. path. Anat., etc., Berlin, 1877, lxx., 111.

RIEDER. Ueber die Gärtner'schen (Wolff'schen) Kanäle beim menschlichen Weibe. Archiv für path. Anat., etc., Berlin, 1884, xcvi., 100.

RITGEN. Zeitschr. für Geburtstk., Weimar, 1832, vii., 573.

ROKITANSKY. Morbid Growths of the Vagina. Pathological Anatomy (Sydenham Society's Translation). London, 1849, ii., 270.

RUGE. Zum Bau der Luftcysten

der Scheide. Zeitschr. f. Geb. u. Gyn., Stuttg., 1878, ii., 29.

SCANZONI. Cysten der Scheide. Krankheiten der weiblichen Sexualorgane, Wien, 1867, ii., 256.

SCHMOLLING. Zwei Fälle von Colpohyperplasia Cystica. Jahresbericht der gesammten Medicin, Berlin, 1876, x., 2, 581.

SCHROEDER. Luftcysten der Scheidenschleimhaut. Archiv für Klin. Med., Leipzig, 1874, xiii., 538.

SCHROEDER. Die Operation der Scheidencysten: Beiträge zur operativen Gynäkologie. Zeitschr. für Geburtsh. und Gynäkol., Stuttg., 1878, iii., 424.

SCHROEDER. Die Krankheiten der weiblichen Geschlechtsorgane. Leipzig, 1886, 499.

SCHÜLLER. Ein Beitrag zur Anatomie der weiblichen Harnröhre. Archiv für path. Anat., etc., Berlin, 1883, xciv., 405.

SCHULTE. Ueber die Cysten der Vagina mit besonderer Berücksichtigung ihrer Entstehung. Göttingen, 1878, 8vo.

SKENE. The Anatomy and Pathology of two important Glands of the female Urethra. AM. JOURN. OF OBSTET., New York, 1880, xiii., 265.

SPIEGELBERG. Lehrbuch der Geburtshülfe. Lahr, 1878, 304.

SUTTON. An Introduction to General Pathology. Phila., 1886, 206.

THALINGER. Des Kystes du Vagin, en particulier des Kystes de la paroi antérieure. Paris Thesis No. 269, 1885.

TILLAUX. Des Kystes du Vagin. Gaz. des hôp., Paris, 1885, lviii., 505.

TILLAUX. Kyste vaginal; difficultés du diagnostic; traitement. Tribune méd., Paris, 1886, xviii., 14.

VEIT. Die Cysten der Scheide, Die Krankheiten der weiblichen Geschlechtsorgane. Erlangen, 1867, 544. (In Virchow's Handbuch der sp. Path. u. Therap., vi., 2 Abth., 2 Auflage.)

VEIT. Ueber einen Fall von sehr grosser Scheidencyste. Zeitschr. für Geburtsth. und Gynäkol., Stuttg., 1892, viii., 471.

VIRCHOW. Die Krankhaften Geschwülste. Berlin, 1863, i., 247.

WARD. AM. J. OF OBSTET., New York, 1879, xii., 611.

WARREN. Large Cyst of Anterior Wall of Vagina. Boston Med. and Surg. Journ., 1879, c, 483.

WARREN. A Case of Cyst of the Anterior Wall of the Vagina. Med. News, Phil., 1883, xliii., 15.

WARREN. Cyst of Gartner's Canal. Tr. Maine Med. Assoc., Portland, 1883, viii., 115.

WATTS. Cyst of the Vagina. AM. J. OF OBSTET., etc., N. Y., 1879, xii., 609.

WATTS. Cyst of Anterior Vaginal Wall; developed from Gartner's Canal. AM. J. OF OBSTET., N. Y., 1881, xiv., 848.

WINCKEL. Ueber die Cysten der Scheide, insbesondere eine bei Schwangeren vorkommende Colpolyhyperplasia Cystica. Archiv für Gynaekologie, Berlin, 1871, ii., 383.

WINCKEL. Cysts of the Vagina. The Diseases of Women. Phila., 1887, 146.

ZWEIFEL. Vaginitis Emphysematosa. Archiv für Gynaekol., Berlin, 1877, xii., 39.

ZWEIFEL. Ueber Vaginitis Emphysematosa und den Nachweis des Trimethylamin in der Vagina. Archiv für Gynaekol., Berlin, 1881, xviii., 359.

A few cases have been recorded for which there are no independent references given.

For Beltz's case, see Pichancourt.

For Gordon's case, see Warren.

For Grynfelt's case, see Eustache.

For Morlanne's case, see Dresch.

For Parks' case, see Churchill.

For Simpson's case, see Bradfield.

For Touatre's case, see Layton.

APPENDIX.

We insert at this point a brief outline of the histories of six additional cases of vaginal cyst, four, heretofore unpublished, having been kindly communicated to us by Dr. Paul F. Mundé, the other two cases having been observed by ourselves, after the completion of the preceding paper. The total number of cases, therefore, considered in this contribution is one hundred and sixty-eight.

MUNDÉ.

CASE I.—Multipara. Cyst size of a large lemon seated on posterior vaginal wall. Incision followed by excision of oval piece of wall; cavity painted with iodine and packed with cotton. It healed by granulation.

CASE II.—Nullipara. Two cysts, each size of small hen's egg, situated in vaginal vault, one to the left, the other in front of cervix. Incision; application of iodine; granulation.

CASE III.—Cyst of anterior wall, size of duck's egg, closely simulating and said to be cystocele. A Gehrung pessary had been inserted by a former attendant. Diagnosis easy. Excision advised.

CASE IV.—Virgin, æt. 21, complained of profuse yellow discharge. A small Sims' speculum carefully inserted so as to expose cervix without injuring hymen. Exposure of cervix impossible on account of a translucent elevation situated on left lateral vaginal wall, midway between hymen and cervix, the size of an English walnut. Puncture and escape of a tablespoonful of a thick brownish mucus. Cyst refilled and again punctured.

THE AUTHOR.

CASE I.—A Ipara, æt. 23. Cyst size of a large hazelnut, situated on anterior vaginal wall just back of meatus urinarius. Incision, escape of a teaspoonful of a thin yellowish, non-purulent fluid; a small piece of iodoform gauze placed in cavity; granulation, cicatrization.

CASE II.—A multipara, æt. about 36. A cyst size of a hazelnut situated on anterior vaginal wall, one-half inch from meatus urinarius. Puncture with hypodermic needle, withdrawal of syringe-ful of dark brown fluid. Patient passed from under observation.

A CONTRIBUTION TO THE STUDY OF DIFFUSE HYPERPLASTIC INFLAMMATION OF THE DECIDUAL ENDOMETRIUM.¹

BY

BARTON C. HIRST, M.D.,
Philadelphia, Pa.

INTERESTING as it might be to study all the inflammatory processes that affect the mucous lining of the pregnant uterus and to note, not only their different manifestations, as in the catarrhal, the polypoid, the hemorrhagic, the exanthematous, the cystic, or the purulent variety, but also their influence upon the course of pregnancy or upon the puerperal state, it would obviously be an impossible task to describe all the varieties of decidual endometritis in the time usually allotted to a single communication to this Society. Even the subject of diffuse hyperplasia of the endometrium must be treated in a very superficial manner, that time may be gained to call attention to a condition which

¹ Read before the Philadelphia Obstetrical Society, September, 1887.

occasionally accompanies this disease of the decidual endometrium, and which I believe has not yet been fully described;¹ an assertion, however, that is naturally advanced with considerable diffidence, in view of the enormous quantity of medical literature that is rapidly accumulating from all quarters of the globe. This condition consists in a great hypertrophy of the connective tissue, blood-vessels, and remnants of mucous membrane occupying the placental site, forming a mass which in extent and shape resembles a second placenta, although, of course, without cotyledones, amniotic covering, or the trace of a cord. This mass becomes gradually loosened from the uterine wall and is finally expelled, but in the mean time gives rise to hemorrhages, and, from its decomposition, to septicemia. My attention was first called to the possibility of such an occurrence some months ago, when I was asked to see a young woman who had been delivered, three days before, of a fetus at the sixth month of pregnancy. The labor had been an easy one, and the medical attendant, a gentleman of judgment and experience, had taken pains to assure the woman that the placenta had come away entire. There had been, however, hemorrhages at frequent intervals ever since the birth, associated with severe after-pains and bearing-down efforts. On examination, the uterus was found much larger than it should have been so long after delivery, the os was patulous, and a fleshy mass could be felt within the uterine cavity, which was soon extracted without difficulty by the aid of a curette, and found to be in length, breadth, and thickness about the size of an outstretched hand without the thumb. A large piece of greatly hypertrophied decidua came away at the same time. The fleshy substance was largely made up of clotted blood, but was evidently of more complicated structure than a partially organized blood-clot. Unfortunately, however, it was placed in preservative fluid of insufficient strength, and was found later to be unfit for microscopic examination. I was considerably puzzled to account for the nature of this specimen, and received very little help from a rather cursory search through medical literature. Surgeon-Major Hensman presented to the British Gynecological Society

¹ This condition hardly answers to the description of placental polyps by Braun, polypoid hematomata by Virchow, Winckel, and others, or placental adenomata by Klotz. Under the title of Deciduoma, however, Klotz has described this condition.

on Feb. 10th, 1886, a substance expelled from the uterus seventeen days post partum, the nature of which he was unable to determine, for at the time of birth the placenta had come away entire. The woman had had hemorrhages before the expulsion of the mass, and died some six weeks after confinement. Some members of the society hazarded the opinion that this may have been a placenta succenturiata, but no definite conclusion was reached. Sanger, at a meeting of the Obstetrical Society in Leipsic in December, 1877, exhibited a uterus taken from a

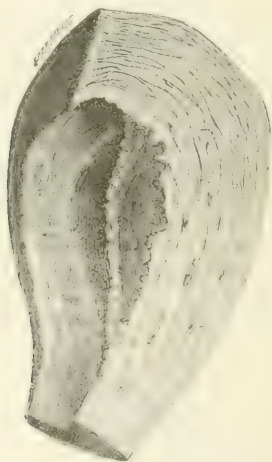


FIG. 1.—A section through the median line of the placental site.

woman on the seventh day of the puerperal state, containing a "placenta-rest" 10 cm. long, 6 cm. broad, and 1 cm. thick. This woman had also had several hemorrhages, and in her case, too, the placenta had been found perfect at the time of its expulsion, according to the statement of the midwife who had attended the case.

A short time after my first experience, I had an opportunity to make a post-mortem examination on the body of a woman who had given birth to a child seven days before, and in her uterus I found a condition which explained to my mind the

nature of the mass expelled in my first case, and one that would account, perhaps, for the cases reported by Hensman and Säger.

Occupying the placental site was a substance much darker in color than the surrounding decidua, and contrasting still more sharply with the pale uterine wall, when seen in profile after a section of the uterus had been made through the median line of the placental site. This substance was elevated 2 cm. above the surrounding surface of the uterine cavity, and extended in length 8 cm., in breadth 6 cm.; the inner surface, to which the

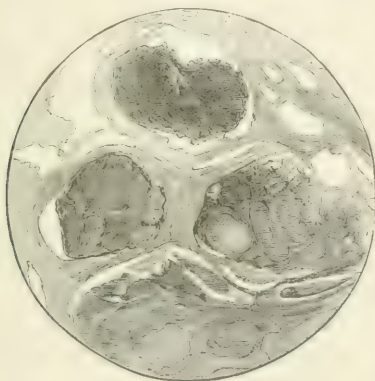


FIG. 2.—Section of substance occupying placental site, magn. 30 diam.

placenta had been attached, was rough and jagged; around the entire periphery the mass was separated from the uterine wall, remaining only loosely attached by the central portion. The whole inner surface of the uterus was covered with hypertrophied decidua, presenting an appearance that must be familiar to any one who has seen many post-mortem examinations of puerperal uteri. The history of the woman from whom this specimen was taken is briefly as follows: she was delivered in the Maternity Hospital of a healthy child after an easy labor; the placenta, expelled spontaneously, was found to be perfect; the temperature rose immediately after delivery, and the woman died seven days after confinement.

A section of this substance occupying the placental site showed under the microscope that it was composed mainly of meshes of fibrous tissue, in the interstices of which were large blood sinuses filled with clotted blood; towards the inner surface, however, could be seen masses of decidual cells and young connective tissue. This was, then, a great exaggeration of the hypertrophy that could be seen throughout the decidual lining of the uterus, and the question arises whether it is not necessary to suspect the existence of such a condition in those cases in which after labor a very large uterus, a copious discharge, a slight febrile reaction, and the escape of characteristic fragments of decidua, indicate the existence of diffuse hyperplasia of the



FIG. 3.—A curette for the puerperal uterus.¹

endometrium. Further, there arises the query as to the treatment of such a case. The adherents of the doctrine of Semmelweis, and they include all obstetricians of the present day, must hesitate to allow a fleshy mass to remain in the uterus, where, cut off from its blood supply, it will surely putrefy. The proper course to pursue, therefore, would seem to be the thorough emptying of the uterine cavity of everything, whether hypertrophied decidua, retained placenta, amnion, or chorion that could decompose within the uterus, and form there a most suitable habitat for the growth of pathogenic organisms and the manufacture of their poisonous products.

As a convenient means of emptying the uterus of substances which can only be productive of harm if allowed to remain undisturbed, I venture to present this instrument made for me by Mr. Gemrig, of Philadelphia.

¹ Dimensions: length 27 cm., breadth of scraping surface 2 cm.

SOME PECULIAR CASES OF ABDOMINAL SECTION.¹

BY

S. G. GORDON, M.D.,

Lecturer on Diseases of Women in the Portland School for Medical Instruction; Visiting Surgeon at the Maine General Hospital; Member of the British Gynecological Society, etc., etc.

THE following cases are sufficiently unique, and possess enough of interest to warrant adding a little more to the literature of abdominal surgery, already grown to enormous proportions. While the general principles which govern the surgeon in treating this class of cases are plain, yet numerous instances must continually arise where one may be at a loss as to what is best to be done.

CASE I.—Mrs. C., aged 30; married about ten years; had one child about two years after marriage; became pregnant in September, 1884.

In January, 1885, I saw her for the first time, on account of a profuse hydrorrhea from the vagina, which had existed, more or less, for a year previous, but had been very much aggravated since pregnancy began. My first examination satisfied me that she was pregnant, although she had doubted it herself.

There was no clinical history of uterine hydatids (at least none had ever been seen), and yet the quantity of fluid and the purely serous character of it plainly pointed to that as the pathological condition.

My advice was to wait until the uterus should be relieved of the fetus, when, perhaps, something more definite could be determined. At the end of the sixth month of pregnancy, labor came on, and she was delivered of a living child—very feeble even for that period of gestation—which breathed for a few hours only.

No signs of hydatids were visible at the time of accouchement and nothing indicating the cause of the hydrorrhea.

The flow of water was less after delivery, but continued more or less until June of that year, during which time I had curetted the uterus several times, and applied iodized phenol, tincture of iodine, and various other remedies.

From June until October, there was an entire cessation of the discharge, and I hoped we had obtained control of the cause.

¹ Read before the Maine Medical Association, June 15th, 1887.

In October it returned, and, notwithstanding curetting and applications were frequently repeated, there was no relief. On the contrary, the daily amount of water discharged was very much increased, estimated by the patient at three or four quarts every twenty-four hours. A peculiarity of the case was that as soon as she went to sleep the discharge ceased. Lying down in the day-time made no visible change.

In the last months of 1885 and the first of 1886, her general health began to suffer very much, as indicated by anemia, dyspnea, loss of strength, etc., etc.

About this time I became satisfied that the water did not originate in the uterus, but came from the Fallopian tube, or, at all events, came through the tube into the uterus, thence externally through the vagina.

The most careful examination failed to find any enlarged condition either of ovary or Fallopian tube, so that the idea of hydrosalpinx being the condition was negatived.

My own opinion was that a secretion took place from the peritoneum, at or near the fimbriated extremity of the tube, which was probably attached to the peritoneum at some point in the pelvic cavity.

Believing this to be the condition, I advised abdominal section and removal of the appendages. A consultation resulted in a disagreement as to the propriety of such an operation, but as a majority were with me in my view of the case, the patient and her husband elected the operation, which was done in March, 1886. Each ovary was more or less cystic, and the Fallopian tube of the right side normal in appearance, but the tube on the left side was enlarged and a good deal corrugated lengthwise on its inner surface; the fimbrial extremity much elongated and enlarged; all parts pale and dropsical, looking as if they had acted as a siphon for water for a long time. A small quantity of serous fluid was found in the pelvic cavity near the extremity of the tube, which had very slight, if any, adhesions to the peritoneum.

The patient did remarkably well, having no unpleasant symptoms during convalescence, and rapidly recovered her health and strength, having had no return of the hydrorrhea up to the present time.

Both ovaries and tubes were removed. I think there is no safety in allowing one to remain where either is diseased sufficiently to require removal. This rule I have always followed in practice, and have taught it in my lectures.

A recent paper by Mr. Tait on "Unilateral Operations on the Uterine Appendages" confirms me in the belief that this is the only safe rule. Mr. Tait has seen many cases where symptoms have not been relieved, and others where disease has appeared on the other side, necessitating a second operation.

Except in very rare cases, where a hope of pregnancy may exist, and where it is much desired, I think the surgeon is not justified in subjecting the patient to the risk of a second operation. That "life should not be put in jeopardy twice for the same offence" should be the rule in medicine as well as in law. Certainly this rule should apply in all cases of abdominal section, if anywhere. A case in point in my experience illustrates the rule :

CASE II.—Mrs. B., aged about 30, came under my care in November, 1884. I found her suffering intensely for a week prior to, and another week during, menstrual periods. The hemorrhage was very profuse, sometimes amounting to severe flooding, which, with the severe pain, resembled a distressing abortion.

During the paroxysms of pain the face became highly congested, so as to be purple, and she remained unconscious for hours at a time. I feared lest at some one of these attacks she would rupture a vessel in the brain. Dilating, curetting, leeching, local applications of all forms, long-continued hot douches, local depletions, were of no avail in relieving any of the severe symptoms. After three months of this kind of treatment, I advised removal of the uterine appendages, which was done in March, 1885.

On opening the cavity, I found all the pelvic organs completely enveloped by a very dense, tough, exudate membrane, which I was obliged to tear through with my fingers before I was able to touch the uterus, ovaries, or tubes.

The right ovary contained three cysts varying in size from a robin's egg to a hen's egg.

The left seemed entirely composed of four cysts, almost transparent, about the size of the smaller ones on the right side.

The entire appendages were firmly adherent to everything around them, so that it was with extreme difficulty I succeeded in detaching the ovary and tube from the right side, ligating and removing them. On the left side I was able to remove a portion from the middle of the tube, and only portions of the cystic ovary, the walls being so thin and so completely bound down to the pelvic wall that I could simply break them up and tear away a portion of it. I did not feel quite satisfied with the condition in which I was obliged to leave them, but hoped by ligating the tube twice between the ovary and uterus that I should succeed in cutting off the blood supply sufficiently to suspend menstruation.

There was a severe peritonitis following the operation, but she finally recovered, and was considerably relieved for some months.

Within three months from the time of the operation, however, she again had hemorrhage, which has occurred with more or less

regularity since, and been accompanied with sufferings almost as great as before the operation.

I have urged a second operation, but as yet without obtaining consent of herself and friends.

I am quite sure that the operation detailed in the following case will have to be done before any permanent cure can be had:

CASE III.—Mrs. S., aged about forty, came into my care in January, 1886. Had been an invalid for fourteen years, suffering from pains in all parts of the body, aggravated very much before and during her menstrual periods. The most violent suffering was through the lower back, the hips, hypogastric, right and left inguinal regions, and down the legs. Dyspepsia had been a marked reflex symptom for many years: but six months before she came under my care she had vomited every time she took any kind of food. She believed that everything was vomited that entered the stomach, and very soon after eating, during this period. Of course, some must have been retained or starvation would have ensued. I soon became satisfied that any attempt to cure this condition by anything but removal of the uterine appendages would be useless. She had been under treatment for uterine troubles for years, by careful, intelligent, painstaking men. In fact, she rather expected me to do the operation when she sent for me, having become discouraged with all other means employed. She had been married sixteen years, and was never pregnant. I certainly had no scruples or fears in regard to unsexing her, so as to render her sterile. I am also quite sure that, in all the cases where I have done the operation, that question was pretty well settled before coming to me.

Examination of the specimens removed in the several cases has satisfied me that the disease had destroyed the procreative power of the organs and no harm had been done in that direction.

February 25th, 1886, I performed the operation. The appendages were adherent at all points, but the right one could be detached entirely, and I removed it very close to the uterus. With the left I was not so fortunate, for I found the ovary very much softened, so that it was considerably broken in removal, and the tube so adherent that I did not succeed in completely detaching it entirely to my satisfaction. Everything required tearing up with the fingers before I was able to separate them enough so that I could ligate the tube.

Peritonitis, both pelvic and general, followed, complicated with most intolerable and distressing vomiting, which continued for several weeks with little or no relief.

By the most careful nursing and rectal alimentation she gradually improved, and a slow, long-suffering convalescence followed. The stomach regained its tone, so that any and all kinds of food could be taken in large quantities and well borne.

The most severe suffering, during the spring and summer, came from a neurasthenia which extended down the legs into the bottom of the feet, producing great pain whenever she attempted to walk.

In September, on my return from Europe, I found her very much improved in her general appearance, and that she had been able to drive about during the summer nearly every day. Appetite and digestion good; no return of menstruation or hemorrhage from the vagina. In October she had a hemorrhage which was preceded by all the usual pain and other symptoms of her former menstrual periods; the flow being quite profuse and lasting about the usual time. In November, December, and January, the same thing occurred at regular periods of four weeks. At some of these attacks the pain was terrible, requiring large and repeated doses of morphine hypodermatically; the character of the pain being such as is usually denominated uterine colic.

In November I felt quite certain that she was suffering from a regular menstruation, which would undoubtedly continue for years longer, unless something more were done. Mr. Tait had reported a similar case in the June meeting of the British Gynecological Society, at which I was present, where he had made a second operation and removed the fundus of the uterus. I determined, if I could obtain the consent of the patient, to make a similar operation.

After three recurrences of menstruation, the patient suffered so much that she finally consented to anything that offered any hope of relief.

January 15th, 1887, assisted by Drs. Weeks and John F. Thompson, I made an incision through the line of the old cicatrix and opened the cavity. The uterus showed no stumps of the tubes, but presented a smooth curved surface, terminating in the broad ligament of each side. Passing strong silk ligatures through the uterus at about the point corresponding to the internal os, I quilted them back and forth, embracing the ligament by a similar one. Dividing the uterus above, I stitched the peritoneum over the stump and closed the abdominal wound by silk sutures.

The weeks that followed were a repetition of the former operation, so far as pain and vomiting were concerned. A low grade of peritonitis continued a long time. A profuse offensive discharge from the vagina began at the end of about four weeks; it was very black, being evidently broken-down blood from the stump at the time when the ligatures were giving way. In about a week or more from the beginning of this, an almost identical discharge took place from the abdominal wound, which I soon became satisfied was due to adhesion of the stump to the peritoneum at the point of incision. This I confirmed by the injection of water through the incision, when it appeared at the vagina.

The smell of this aggravated the nausea and vomiting, which, however, continued with more or less severity for some time after. It is now five months since the last operation, and there

have been no signs of return of menstruation. More or less vomiting yet continues alternating with entire freedom from it.

The various theories in regard to menstruation would seem to be exploded, when we find it kept up, after what would seem to be a removal of the great mass of the uterine appendages. Certainly in the two last-mentioned cases, both Fallopian tubes were completely ligated, thus, for the time being at least, closing the lumen of the tubes.

There must have been, by some mysterious route, a circulation established between what was left of the appendages and the cavity of the uterus.

Dr. Arthur Johnstone, of Danville, Ky., in a paper read before the British Gynecological Society, in June last, contended that the fundus uteri is really the seat of the menstrual function; and these cases in a measure tend to confirm that view. Among so many conflicting theories of menstruation, one is in doubt about anything; so I shall not be surprised at any development in any of these cases, so long as any portion of the uterus remains in the pelvis.

CASE IV.—Mrs. P., aged about 43; suffered many years from pelvic inflammation, complicated with, if not due to an interstitial fibroid of the uterus. The local pain was very severe and the neuralgic suffering intense throughout the back, hips, and down the thighs and legs.

The reflex disturbances of stomach and digestive organs were severe, and, indeed, nearly all the functions of life were so impaired that she was a helpless, hopeless invalid.

At a consultation of the Surgical Staff of the Maine General Hospital, it was decided to remove the uterine appendages, in order to stop the further growth of the tumor, which was about the size of a man's fist. This was done in June, 1884. No relief to the symptoms followed. She continued to suffer until May, 1886, when she implored her physician to do something to palliate her misery.

I advised hysterectomy, which was readily assented to.

On opening the abdomen, the uterus was found bound down by a complete exudate membrane which I tore through, and removed the uterus, which was found a mass of calcareous degeneration; almost as solid as stone. She has almost entire relief to her suffering, and can be about her house and work.

Since this paper was written I have seen the patient, who

informs me that she has not suffered a moment's pain since the operation. Her whole appearance has changed so that I did not recognize her when she came to my office, on purpose to tell me how much she now enjoys being in perfect health.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, October 18th, 1887.

The President, DR. P. F. MUNDE, in the Chair.

DERMOID CYST OF THE OVARY.

DR. J. B. HUNTER presented a specimen of dermoid cyst, which he had removed from a patient aged 18 years. The tumor was only of four months' standing, and had not caused much pain. It was adherent at several points. The operation had presented no special difficulties. He had not made the diagnosis of dermoid cyst previous to opening the abdomen. Such tumors usually gave rise to excessive pain—a symptom which was not present in his case.

DR. WYLIE said that the differential diagnosis between fibrous tumor and dermoid cyst was often extremely difficult. A patient had been recently brought to him with supposed fibroid; she had a good deal of pain, the tumor was about the size of a large orange, and had a firm uneven feel. On opening the abdomen, an adherent dermoid cyst was found, with purulent contents. The opposite ovary was generally indurated and was also removed.

DR. LEE thought that the location, rather than the size in the case of small tumors, was the most important point in the differential diagnosis. If the tumor was situated high up in the pelvis, so that it could not be reached by the examining finger, it might be extremely difficult to make out its exact character, but if it were readily accessible through the vagina or rectum, a positive diagnosis could sometimes be made. He cited the case of a patient who had a small adherent cyst in Douglas' pouch, by a careful examination of which through the rectum small spicula of bone were distinctly felt; the diagnosis of dermoid cyst, which was also made by Dr. Polk in the same manner, was fully confirmed on opening the abdomen. The nodules on the exterior of a fibrous tumor were always smooth and rounded, and never presented the sharp angles felt in spicula.

DR. HANKS cited a case in which both Dr. Lusk and himself had been in doubt as to whether an abdominal tumor was a fibroid or a thick-walled ovarian cyst or a dermoid tumor; the diagnosis was settled by withdrawing a quantity of sebaceous fluid with the aspirator needle.

DR. COE said that it was generally conceded by authorities that a positive diagnosis of dermoid cyst (before puncture or rupture of the same) could only be made when bone could be distinctly felt, as in Dr. Lee's case, and this was rarely possible. He had on two or three occasions seen Dr. T. A. Emmet's presumptive diagnosis of dermoid confirmed at the operating table. The points on which Dr. Emmet seemed to lay most stress were slow growth and moderate size of the tumor, especially if it were a thick-walled cyst firmly adherent in Douglas' pouch, together with obscure fluctuation.

DR. HUNTER thought that such cysts often grew rapidly, late in their course. Excessive pain was a distinguishing feature in such cases.

DR. WYLIE thought that they were nearly always of slow growth.

DR. HANKS believed that where there was a doubt between fibroid and thick-walled cyst, we were more apt to find that the latter was present.

THE PRESIDENT said that he had had five cases of dermoid cyst, in all of which he had been in doubt as to the exact character of the tumor before operation. Since dermoids were of congenital origin, they tended to grow very slowly. Pain was certainly a marked symptom. In one case, he made the diagnosis by feeling a plate of bone in the cyst-wall. The patient was a girl eighteen years of age, under the care of Dr. J. T. Johnson, of Washington. Her abdomen had been enlarging gradually for four years, and a diagnosis of pregnancy had originally been made. On examining the abdomen, what felt like a plate of bone could be distinguished extending two or three inches below the umbilicus.

DR. JANVRIN thought that the main points in the diagnosis were continuous pain, and slow growth of the tumor. If he were sure that a cyst was ovarian, and it grew very slowly, and there was considerable pain, it was probably dermoid. He referred to a specimen of dermoid cyst with a diverticulum extending into the rectum (exhibited to the Society two years ago), in which the diagnosis had been obscure. Pain was due to inflammatory action in the tumor; it began after the latter commenced to enlarge.

EPITHELIOMA OF THE VULVA.

DR. JANVRIN presented a specimen consisting of both labia and a portion of the posterior vaginal wall, which he had removed for malignant disease a few days before.

The patient was a single woman, aged fifty, who, a year before, had noticed a small excrescence on the left labium. This grew rapidly and caused much pain and irritation. The reporter saw her for the first time two weeks before and made a diagnosis of epithelioma. He found that the growth involved both labia majora and nymphae, beginning at a point one inch behind the anterior commissure and encircling symmetrically the vulvar outlet. It involved also about two inches of the posterior vaginal wall. It was ulcerating and very offensive. The mass was rapidly excised with scissors, the dissection being begun at the upper portion of the labium, carried downward and upward on the opposite side. As soon as the growth was detached on the left side, the bleeding

surface was seared with the Paquelin cautery, which was also repeated on the right side. Not more than half an ounce of blood was lost, and it was necessary to apply three catgut ligatures to spouting vessels. The wound was dressed with a saturated solution of bicarbonate of soda, and when the slough separated at the end of the week, leaving a healthy granulating surface, a simple carbolic dressing was applied. This was the third case of epithelioma of the vulva which the speaker had seen within a year and a half; the disease was unusually extensive.

DR. LEE thought that the reporter had been unusually successful in arresting the hemorrhage by means of the cautery alone. In his own experience, primary and secondary hemorrhage were the rule; he was accustomed to secure the base of the mass with a cobbler's stitch, if possible.

DR. McLEAN said that he had seen Dr. Thomas excise an epithelioma of the vulva with the cautery alone, the hemorrhage being insignificant, which he thought was unusual.

DR. JANVRIN thought that the operator could work more rapidly by excising with the scissors and then applying the cautery.

THE PRESIDENT referred to a case in which he had removed a large sloughing epithelioma which involved the entire external genitals; he used the curved Paquelin alone, and had no hemorrhage except from the artery of the crus clitoridis, which required a ligature. The operation was merely palliative.

DR. HANKS said that he had recently removed an epithelioma of the mons and clitoris, using a scalpel. There was no arterial hemorrhage except on dividing the vessel supplying the clitoris, which was readily controlled by a deep suture.

SECONDARY HEMORRHAGE FOLLOWING REMOVAL OF THE UTERINE
APPENDAGES—RECOVERY AFTER TRANSFUSION OF SALT
SOLUTION.

DR. LEE reported the following case: A young married woman entered his service at the Woman's Hospital last spring, and had operations for the repair of lacerations of the cervix and perineum. She had ovarian symptoms at that time, and the diagnosis of chronic oöphoritis and catarrhal salpingitis was made. After the perineorrhaphy she had secondary oozing from the wound, the cause of which could not be determined; it was controlled by pressure. She returned home, and had so much pain that she re-entered the hospital in September and consented to have laparotomy performed. On examination, the left ovary was found to be enlarged and prolapsed, while the right seemed to be small. It was proposed, with her consent, to remove the latter also, in the fear that it might subsequently become diseased. The operation was performed October 14th. On opening the abdomen, it was found that the patient had formerly had peritonitis, although there was no history of an attack. The peritoneum was much thickened, and the intestines were generally adherent. There was an unusual amount of hemorrhage, even from the abdominal

wall, and the separation of the adhesions was followed by general oozing.

The appendages were removed in the usual manner, and the stumps were carefully re-examined before the wound was closed. As the patient's condition was alarming, a drainage-tube was inserted, the cavity was closed, and she was placed in bed as soon as possible. She rallied somewhat, but four hours later, after vomiting, she suddenly collapsed. Dr. Hanks was called; he re-opened the cavity, removed twenty-six ounces of blood, and searched for bleeding points, but none could be found as there was general oozing. The patient grew weaker, and, when the speaker saw her two hours later, she was apparently moribund. At his request, the house surgeon, Dr. Outerbridge, transfused ten ounces of warm saline solution, and introduced the same quantity three hours later. The regular apparatus being out of order, the operation was performed with an ordinary tin funnel inserted in a piece of rubber tubing, an old aspirating needle being attached to the other end. The patient began to improve after the first transfusion, and, although she was not out of danger, she was doing well and seemed in a fair way to recover.¹ The interesting points in the case were: 1. The presence of extensive adhesions without a previous history of peritonitis; 2. The strong evidence of a hemorrhagic diathesis on the part of the patient; 3. The utility of transfusion in such apparently hopeless cases.

In reply to a question by Dr. Wylie, Dr. Lee said that he had never used enemata of hot saline solution in cases of hemorrhage, although he had employed simple hot enemata in collapse, and to relieve intense thirst after abdominal sections.

DR. WYLIE remarked: I have recently resorted to a simple means of preventing shock and obviating the necessity of transfusion—that is, I use rectal enemas not only to stimulate and nourish the patient, but to make up for the volume of blood lost. If while operating a large amount of blood is lost, I order a nurse to give during the operation from six to eight ounces of hot beef tea or solution of peptonoids, to repeat it every half-hour as indicated by the patient's condition. Only last Saturday I did a supra-pubic hysterectomy, during which a very large amount of blood was lost, and the patient's pulse began to fail. While the operation was going on, several enemas of six ounces each of hot saline solution were given, and repeated every half-hour. The pulse rallied, and there was little or no shock. I believe that hot saline solutions given by the rectum under these conditions are directly absorbed and take the place of the blood lost, and if promptly used will often prevent shock. It takes the place of transfusion.

DR. HUNTER remarked that injections of brandy and beef-tea had been given at the Woman's Hospital, under the same circumstances, many years before.

DR. LEE thought that, during collapse, the fluid would be less likely to be absorbed when introduced into the rectum.

DR. HANKS said that, after re-opening the cavity in the case re-

¹ The patient ultimately made a perfect recovery.

ported, he quickly removed with hands and sponges such clots of blood as were easily reached. He then religated both pedicles, and after that thoroughly washed out the abdominal cavity by forcing through the Davidson syringe fully two quarts of quite warm (105° to 110°) water. By placing the distal end of the syringe in the bottom of Douglas' pouch, the water passing upwards, brought all remaining clots to the abdominal wound. Deep interrupted catgut (No. 4) sutures closed the wound.

DR. SIMS cited a similar case of collapse after laparotomy, in which he had, with complete success, transfused twelve ounces of salt-solution (ninety-three grains to the quart) into the median basilic vein, using a glass funnel and tube.

He had often encountered unexpected adhesions, where there had been no previous history of peritonitis. In one instance, it was utterly impossible to enter the peritoneal cavity in the median line, so that he was obliged to make a transverse incision to one side of the first one, through which, after an hour's work, he succeeded in reaching and removing a large dermoid cyst. The patient recovered.

THE PRESIDENT referred to a case of hemorrhage from malignant disease of the uterus, in which he had, with the aid of Dr. Fowler, transfused three ounces of beef-peptone. The patient recovered after having some alarming symptoms, and died three months later of the cancer. He had transfused saline solution in two cases (twice in each), but with only temporary benefit. In neither instance did the patient present the head-symptoms and evidences of collapse and dyspnea noted after the introduction of the peptones and blood.

DR. LEE thought that it was important to transfuse a considerable quantity of fluid, but to do so slowly.

OVARIAN CYST AND TUBE REMOVED BY LAPAROTOMY—UNUSUAL DIFFICULTY IN PENETRATING THE ENVELOPING FOLD OF PERITONEUM.

DR. NILSEN presented the specimen which he had removed from a woman, whose other tube and ovary with a small dermoid cyst he had extirpated some months before, at which time he preferred not to extend the operation, seeing that it had already consumed much time. On opening the cavity the second time, he found that the tube and ovary were fused into one mass and were covered with what appeared to be a layer of unchanged peritoneum, which he was obliged to incise before he could reach and remove a small ovarian cyst and enlarged tube. He presented the specimen as one that could not have been removed except by the method adopted.

DR. WYLIE said that the condition described was not an unusual one. The enlarged and prolapsed appendage sank behind the broad ligament, and the peritoneum rolled over them. It was always possible to tear through the fold at a point near the corner of the uterus, and then to strip off the adherent tube and ovary.

DR. HUNTER had also noted the same condition on several occasions.

APPARATUS FOR SQUEEZING OUT SPONGES.

DR. HUNTER showed a press (Hennis') devised for pressing the juice from fruit, which he had found useful for rapidly and thoroughly squeezing out the sponges used during laparotomy or other operations. They could be handled very hot in the squeezer.

OFFICERS FOR ENSUING YEAR.

President, Dr. H. T. Hanks.
First Vice-President, Dr. E. L. Partridge.
Second Vice-President, Dr. H. M. Sims.
Recording Secretary, Dr. Egbert H. Grandin.
Corresponding Secretary, Dr. J. R. Nilsen.
Treasurer, Dr. J. L. Morrill.
Pathologist, Dr. Jas. B. Hunter.

Stated Meeting, November 1st, 1887.

The President, DR. H. T. HANKS, *in the Chair.*

TENACULUM.

DR. CLEVELAND presented a tenaculum with its point curved in three directions, thus insuring great retentive power.

TUMOR OF THE KIDNEY.

DR. MCLEAN presented the specimen removed *post mortem* from a patient with the following history:

"Mrs. H., æt. 43 years, married about four years, nullipara. Has menstruated regularly but scantily, and has enjoyed fair health until six months ago; with the exception of a 'lump' which appeared in the right inguinal region, and grew to the size of an apple, and after some months disappeared. All of this occurred when she was about 18 or 20 years old.

Six months ago she began to have pains in the right groin which were intermittent and severe. These pains became more frequent and more diffused over the right portion of the abdomen three months ago. The stomach became troublesome, digestion imperfect, nausea quite frequently, emaciation became marked, and the skin somewhat waxy in appearance. Palpation of the abdomen at this time showed a tumor about the size of a small orange occupying the right hypogastrium, slightly movable but very tender. Vaginal examination showed nothing. The uterus apparently normal, and no tumor felt.

From that time, three months ago, until the present (Oct. 20th), the patient has steadily emaciated, though not extremely, and has suffered from repeated attacks of peritonitis apparently confined to the vicinity of the tumor, which latter has steadily grown more conspicuous, and begins to bulge over the median line.

At this date I saw the patient in consultation with her physician, Dr. A. R. Carman, and found her cachectic, with a yellowish

hue to the skin. Pulse 90, temperature $99\frac{1}{2}^{\circ}$. Menses have been absent two months.

The tumor is now as large as a fetal head and occupies the umbilical and hypogastric regions, extending about two and one-half inches above the umbilicus. On palpation, the globular portion of the tumor can be felt continuous with a solid mass extending deep down toward the right lumbar region. The tumor is slightly movable, but exceedingly tender. It feels hard without fluctuation. *Percussion shows distinct resonance* over the most prominent portions, in fact no dull note can be obtained anywhere. Vaginal examination showed the tumor to be without pelvic connections, the uterus movable and small.

Menstruation of three days came on at this time after an absence of two months.

On the 25th, severe peritoneal pains were renewed, requiring morphia to control them. On the 26th, the tumor had apparently enlarged toward the left side, where for the first time severe local pains were felt. The pulse ran up to 110, temperature $99\frac{1}{2}^{\circ}$. Patient's face is anxious and very cachectic. Due preparations being made, laparotomy was performed. The abdomen was easily and rapidly opened with almost no hemorrhage. The omentum and colon presented at the wound, the colon being adherent to and crossing the middle of a dark vascular tumor, on the left side of which hemorrhage of recent occurrence had taken place under the peritoneal adhesions. On gently and rapidly separating the adhesions, profuse hemorrhage from the spot above alluded to took place, and it became necessary to open the tumor and evacuate ten ounces of a soft encephaloid substance mixed with clots of blood. The sac being held well up to the edges of the wound, it was quickly ascertained that the growth was incorporated with the kidney, and could not be moved on account of the extensive adhesions, etc.

The hemorrhage being controlled, the sac was sewed carefully into the wound, the peritoneal cavity having escaped invasion by blood or other substance.

The patient showed signs of collapse, and died within two hours in spite of all means taken to revive her."

The tumor contained osseous tissue, and the globular mass was directly continuous with the pelvis of the kidney. A noteworthy point about the case was the distinct, clear resonance on percussion over the tumor—a point which had strongly suggested to the speaker a tumor of the kidney when he had first examined the patient.

DR. B. FMMET inquired as to the connection existing between the tumor and the hematoma, and as to whether *post mortem* the resonance was accounted for except by the overlying colon.

DR. McLEAN replied that the hemorrhage had taken place from

a large vein in the sac of the tumor, and that the blood was encapsulated in adhesions behind the peritoneum. The resonant note on percussion was due to the presence of the colon above the tumor.

DR. LEE could not agree with the statement that resonance over a tumor was suggestive of a growth or enlargement of the kidney. He had frequently noted the same point in connection with multiple uterine fibroids.

DR. FOWLER inquired if disease of the kidney had been suspected from an examination of the urine.

DR. ABBOTT thought that the growth could not be in connection with the pelvis of the kidney, else the contents would have drained away.

DR. LEE stated that he had understood Dr. McLean to say that the patient had not lost much blood at the operation, and if so, he questioned if transfusion would have been of any avail. This procedure he considered only of utility where existing shock was due to loss of blood. In surgical shock, the condition was not one of diminished blood pressure, but of loss of power in the vaso-motor nerves, and transfusion, therefore, in the latter condition, could not be expected to be of benefit.

DR. B. EMMET asked in regard to the extent of the implication of the kidney in the growth, and as to whether the hard deposit was true bone.

In reply, DR. McLEAN stated that the urine had been carefully examined and had yielded no evidence of structural disease of the organ. He had not intended to give the impression that the tumor was connected with the pelvis of the organ, and he did not think it was, else Dr. Abbott's criticism would be just, as the contents would have discharged. In regard to resonance over the growth, he did not wish to imply that it was diagnostic of tumor of the kidney. The point he wished to make was that resonance over a tumor was a valuable sign in the differential diagnosis between ovarian tumors and tumors of the kidney. Ovarian cysts rarely pushed the intestines before them. In the presence of a solid tumor, and where fibroids could be ruled out from the fact that the tumor was not in connection with the uterus, the fact of resonance over it on percussion, he thought, should suggest a tumor of the kidney. As to transfusion, he agreed perfectly with Dr. Lee, and he had entertained the idea in the case he had reported for the reason that the patient was suffering from shock, the result of loss of blood whilst the adhesions were being separated. Although the cretaceous material had not been carefully examined, he believed it to be true bone, and such an occurrence was not rare in the kidney.

DR. FOWLER recalled the fact that both the kidney and bone were formed from the mesoblast, and therefore, from an embryological standpoint, it was not surprising to find bone in the kidney.

PHOTOGRAPHS OF DISEASED TUBES AND OVARIES.

DR. WYLIE presented a number of photographs of diseased tubes and ovaries, selected from about 110 specimens, and clearly typifying the appearance of these organs in case of oöphoritis, pyo-salpingitis, tubercular disease, etc.

PYO-SALPINX, PELVIC ABSCESS, RECURRENT ATTACKS OF PELVIC PERITONITIS, LAPAROTOMY.

DR. WYLIE presented a specimen removed by laparotomy from a patient with the following history:

Age 30, married fifteen years, one miscarriage. About four years previously had come to New York and consulted a prominent gynecologist on account of pelvic pain, and with a history of pelvic peritonitis. This gentleman had examined her and detected pelvic trouble, but had advised against an operation, and had told her to return home and to wait for the menopause when relief would come. She had waited up to a few days ago, when the speaker first saw her, and had had three separate attacks of peritonitis. On examination, he had found a non-fluctuating tumor in the left broad ligament the size of a cocoanut, and on the right side a tumor the size of a goose-egg. He had performed laparotomy, and the operation being very difficult, owing to the dense adhesions, had tapped the larger growth, and, to his surprise, withdrew fully one pint of pus. He removed the organs, washed out the cavity according to his custom, and the patient was doing well. He desired to emphasize the point that, in a condition like the one he had described, it was hardly a wise or safe thing to send a patient home to await the menopause.

DR. LEE considered it very fortunate for the patient that she had been operated upon, seeing that the abscess might at any moment have burst. He was surprised to hear that any one detecting such a large mass should be willing to advise waiting for the menopause, particularly at this patient's age.

SIMPLE OVARIAN CYST.

DR. HUNTER presented the specimen. The patient was aged 24, had had two children and two miscarriages. For a number of years had suffered from pain in the left side of the abdomen, and she had been variously treated for cellulitis and oöphoritis. He had first seen her two months previously, and on examination he had not been able to make a diagnosis. As the pain did not yield to routine measures he had made an exploratory incision that morning, and had removed a small ovarian cyst which was bound down in the pelvis. He had checked the hemorrhage resulting from breaking up the adhesions by tamponing the vagina with cotton. The peculiarity of the case was the great amount of pain caused by such a small cyst. (The tumor proved to be a true dermoid cyst.)

DR. MUNDÉ stated that pelvic pain was a very variable factor. Lately he had operated on a patient who complained of persistent pain in the left side. He had found the ovary and tube on that side normal and only slightly adherent, whilst on the right side the organs were markedly diseased and greatly adherent. He did not remove the appendages on the left side, and the pain in that side had since disappeared. He had further noticed that the amount of pain was not always propor-

tionate to the amount of disease: slight disease, great pain, and *vice versa* being not uncommon.

DR. B. EMMET had often noted the same fact; the degenerated organ often did not cause pain, whilst the slightly changed organ did.

DR. CLEVELAND believed that in Dr. Hunter's case the pressure caused by the incarcerated tumor in the pelvis caused the pain.

DR. LEE agreed with the previous speaker. In the presence of many adhesions, tumors in the pelvis always caused pain from pressure on the nerve tracts.

DR. WYLIE said that the adhesions *per se* were not painful, but that pain resulted from interference by these adhesions with the function of some organ.

DR. MUND referred to several cases which he had recently seen where careful bimanual had failed to reveal cysts. On exploratory incision he had in two instances, nevertheless, found small ovarian cysts, and in a third case a double hematoma. The cyst-walls were so thin and flaccid that they collapsed on pressure, and thus escaped the bimanual touch.

DR. GEORGE B. FOWLER read a paper entitled

NOTE ON THE USE OF CALOMEL IN CERTAIN DISEASES OF CHILDREN.¹

In opening the discussion DR. LEE stated that he had used calomel a great deal, especially in hospital practice, and he had found it of great value in two of the conditions treated of by the reader, but of not much utility in a third. In the early stage of summer diarrhea, and in the kidney complications following scarlatina (slight tubular nephritis) he trusted to calomel more than to anything else. In diphtheria he had never noted good results, but this was possibly because he had not resorted to the doses recommended by Dr. Fowler. It had been his custom to administer from one-twelfth to one-third of a grain every four hours to a child of one year. In the future he intended to use the drug more boldly.

DR. MCLEAN stated that although he had not had special experience with the drug in case of children, he had been personally much impressed with its soothing effect in diphtheria when used in his own case.

DR. TALBOT was in the habit of relying, to a great extent, on calomel. He administered one-eighteenth of a grain every two hours to infants, till the characteristic stools were obtained. In case of adults, he was accustomed to give about ten grains at the first visit in the beginning of a pneumonia. He had also found the drug very valuable, when combined with the oxalate of cerium, in the nausea and vomiting of early pregnancy.

DR. FREEMAN claimed that calomel filled a place that nothing else would. He used it, however, in smaller doses than had been recommended by the reader.

DR. CLEVELAND had used calomel both in large and in small doses. In icterus neonatorum, he had often noted that the jaundice disappeared more quickly under the administration of calomel in one-one-hundredth-of-a-grain doses frequently repeated than after anything else. In the jaundice of adults, he had found

¹ N. Y. Med. Rec., Nov. 19th.

one-twentieth-of-a-grain doses, repeated every hour or two, very useful. In the fetid breath of children, calomel was also of the greatest value. As regards pneumonia, in its early stages, a large dose (twenty-five grains) had a surprising effect on the temperature, even aborting the disease, and he should expect the same in children from a relatively smaller dose.

DR. TALBOT stated that he knew of twenty to thirty grains having been administered to children in cholera morbus with good results.

DR. MORRILL stated that he had found that small doses, in triturations frequently repeated, had a better effect than a large dose given at once.

DR. JACOBI expressed the opinion that calomel acted locally as well as internally. He instanced, for example, its beneficial effect on the eye in case of pannus. Similarly he believed that the drug had a local effect on the pharyngeal mucous membrane when this was affected by the diphtheritic deposit. He recalled the fact that, about four years previously, he had advocated the use of the corrosive chloride in membranous croup, and he was still convinced that it was one of the best remedies in this condition. Large doses were readily tolerated by the infant. He had recorded an instance of fibrinous bronchitis in a baby of four months, where he had administered one and one-third of a grain in four days. He believed that often where drugs failed to act it was the fault of the practitioner in that the doses given were too small. He was to-day much more of a believer in drugs than twenty years ago, and this because he knew more about their action and effect. New-fashioned remedies wear out very quickly, as witness the recent hoax from France in regard to the curability of tuberculosis by the sulphide of hydrogen. For this reason, we should hold fast to the old remedies which had been proven good. In regard to diphtheria, where the fibrinous element was predominant, mercurials were unquestionably of value. Were they also of value in the presence of diphtheritic sepsis? Many high authorities claimed that they were, and this was a point which should be tested. The mercurial certainly could not do more harm than the sepsis. Nearly forty years ago, he had treated a case of fibrinous bronchitis in an infant with calomel (one-half to one-fourth grain) and tartar emetic (one-eightieth grain), every one-half to one hour, and the case had recovered. He applied this treatment then because he had been told to do so; but since, of his own accord, he had done the same thing in a number of instances and with a similar result. He could not say much about very large doses of calomel, but they were probably not injurious; in adults they have good effects. Frequently, at the beginning of a pneumonia or a typhoid, he had ordered twenty to twenty-five grains to be thrown into the mouth dry, with the result of soon obtaining good calomel stools, and of saving his patient the colic. The drug was converted into an albuminate in the mouth, and thus absorbed.

In closing the discussion, DR. FOWLER stated that he had purposely avoided physiological considerations in his paper. It had been the habit in the past to administer minute doses of calomel, and he believed we were unquestionably right in returning to them. He agreed with Dr. Jacobi that the deposit in the pharynx was not specially dangerous unless there were also

sepsis, but the effect of calomel was most marked on the deposit, and the extension to the larynx was in a measure prevented. He believed that the constitutional effects were valuable, and that the glandular system generally was affected by the drug.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Special Meeting, September 17th, 1887.

The President, THOS. M. DRYSDALE, M.D., in the Chair.

REMARKS ON THE REMOVAL OF UTERINE FIBROIDS BY ABDOMINAL SECTION.

By GEO. GRANVILLE BANTOCK, M.D., F.R.C.S. ED., Surg. Samaritan Free Hospital, London, England.—Dr. Bantock began by saying that the tumor which formed the text for his remarks had been removed the day before from a single woman aged 36, a patient of Dr. Joseph Price, and weighed between five and six pounds. At first he had doubted the propriety of operating because there seemed to be no indication for interference beyond the rate of growth of the tumor and because the patient, as he had been assured by Dr. Price, very much minimized the extent of her sufferings. The matter was thoroughly explained to her, the danger of the operation was made clear, and it was pointed out that, if operation were necessary at some time, she would never be in a more favorable condition for it. The patient was aided by her mother in coming to a decision and he was struck by the readiness with which they both decided in the affirmative. This was so far fortunate, for it will be seen that the tumor had in its upper part already undergone cystiform degeneration. (Here an incision was made into the cyst before the Society, giving exit to over half a pint of thin sero-sanguinolent fluid.) He was happy to say that the condition of the patient was most satisfactory.

Dr. Bantock then proceeded to the general subject of the removal of uterine fibroids by abdominal section, which he said was a very important one. He pointed out that operations were to be divided into two schools, the one preferring to treat the pedicle by the intra-peritoneal method, the other preferring the extra-peritoneal. The advocates of the former based their arguments on the success which has resulted in the operation of ovariectomy from the introduction of the intra-peritoneal ligature of the pedicle. But it was scarcely necessary for him to show how falla-

cious such reasoning was, for the conditions were so dissimilar. It was true that there were many different forms of ovarian pedicles, it might be large or small, long or short, broad or narrow, thick or thin, but they were all essentially of the same character and capable of being more or less easily secured by ligature which might be confidently relied on if properly applied. On the other hand, the uterine stump is very different. It is composed of muscular fibre, white and yellow elastic tissue, forming a structure so peculiar that under the pressure of a ligature tied with as great a strain as it will bear, it yields before the compressing force to such an extent that in a few hours the ligature may be quite loose.

This occurs even when the pressure is exerted with the aid of a screw, and he pointed out to those who were present at the operation that at the first tightening of the screw there was a complete arrest of the bleeding for the time, but that at intervals of ten or fifteen minutes the screw would take a turn or more with facility. In this way an amount of constriction was attainable which, if attempted at once, would probably lead to the breaking of the wire or the cutting of the tissues. He had just come from the meeting of the American Gynecological Society, where he had read a paper on the subject of the treatment of the pedicle and where the opposite school was so well represented in the person of Dr. Martin, of Berlin, and he had the satisfaction of feeling that, for the time at least, he had established his position.

Now the pedicle in this operation varies very much, not in the nature of the tissues forming it, but in the extent and manner in which the parts are involved. Thus the tumor may spring by a distinct pedicle from the fundus or some part of the free surface of the uterus. In such a case the application of the extra-peritoneal method is very simple, and his results have been uniformly good; for in thirteen of these cases, all the patients recovered. On the other hand, of all the cases of this kind treated by the ligature and intra-peritoneal method, five in number, only one was successful. Moreover, he had attempted the method in several cases and had been obliged to resort to the extra-peritoneal method after failure of the ligature, though preceded by compression with very powerful forceps. When the body of the uterus is extensively involved in the growth, then matters may be very much complicated. The broad and ovarian ligaments may be so lax that it is a simple matter to include ovaries and uterus in one encircling loop; such a case is little more difficult than an ovariectomy done with the clamp. But the ovarian ligament may be so short on one side that it has to be ligatured separately. That had to be done in the case that furnished the occasion for these remarks. As a rule, it is advisable in such a case to secure the uterus and other ovary first, to transfix the stump with supporting pins placed across the abdominal wound, to cut away the tumor, trim the stump, and then remove the ovary, lest in tightening the instru-

ment any part of the ovarian pedicle should be pulled through the loop of the ligature. In the case under consideration, it was not necessary to observe this order, as the broad ligament on the left side was very lax, while the ovarian ligament was very short. On the right side the ovary could be raised quite out of the pelvis. Sometimes both ovaries are thus tied down and have to be secured separately. The same precautions must be observed.

But the disease may involve the whole of the body of the uterus properly so called. Then one must make a pedicle, and this is the most difficult state of things to overcome. It was for such a state of things he had devised his method of partially enucleating the body of the uterus and the lower portion of the tumor. The large vessels of the ovarian plexus are secured on each side by two pairs of forceps or stout ligatures, the lower of each pair being placed an inch higher than the level of the proposed constriction. Then the peritoneal investment is divided all round on a level between the upper and lower forceps, and reflected downward toward the cervix and nearly to the level at which the loop of the *serre-neud* is to be applied. In doing this it is necessary to seize the peritoneal edges with the forceps placed at intervals of about an inch. When the reflection is completed, these instruments are collected and raised up and the wire loop is applied outside of the peritoneum. Sometimes, and especially when it is desirable that the patient should not lose much blood, it is well to throw an elastic ligature around the uterus and broad ligaments as soon as the division of the peritoneum is effected. Applied in this way, it serves to draw in the broad ligaments toward the uterus and to enucleate the tumor. It is to be removed as soon as the *serre-neud* is applied—above or outside it, of course. In this way an inch or more in the length of the pedicle may be gained. Remember that in this method it is necessary to have the stump so long that the whole of the constricted portion must be outside the peritoneal cavity; in which position it is to be retained by the transfixing pins which pass through the stump just outside the wire loop and rest on the parietes on each side of the wound. While the peritoneum is being reflected, the tumor should be held up by the assistant and thus it rises gradually out of the pelvis with the uterus. One precaution to be observed very carefully in these cases is to transfix with the pins *before* cutting away the tumors. He once lost a patient through the non-observance of this precaution. The last steps are to cut away the uterine tissue to within a quarter of an inch of the pins, and to trim the loose peritoneum by cutting it away to within half an inch of the loop and then stitching it from opposite sides across the surface of the stump, to hold it all well together. Before closing the wound, give the screw a final turn if it will allow of it. Remember that the distal portion of the stump must slough off, that it is desirable

that the amount of this tissue should be as small as possible, and that it is necessary to keep it out of the peritoneal cavity. You may have heard great stress being laid upon the character of the mucus in the uterus and cervical canal and have observed great care used in wiping it away and setting aside the sponge employed for the purpose. One operator has gone so far as to pass an iodoform pessary down the canal for the purpose of disinfecting. This is a practice with which he has no sympathy; nor is it rational or founded on any sound reasoning. He looked on it as a bug-bear and regarded it as a means of withdrawing attention from other and more important matters of detail. As to comparative results, Martin had just reported 84 cases with a mortality of 25; while Dr. Bantock was able to point to 72 cases with only 12 deaths.

Listerism.—There is some misapprehension of the value of terms. Some operations are termed *aseptic*, but the result only can prove any operation to have been aseptic. All operations are, or are not, performed upon an antiseptic method. Dr. Bantock has now discarded all antiseptic agents. When Listerism was first introduced, he used it in all its details, and continued to do so until he lost a patient, and had others affected by what he felt sure was carbolic poisoning. An easy and sure test for this is the absence of sulphates from the urine. In one case of carbolic poisoning, the temperature rose to 107°, and the patient was almost moribund; by means of wet sheets and ice-packing, the temperature was brought down to normal in eight hours, and she recovered. In one fatal case, the kidneys were found congested; there had been acute suppression of urine. After this experience, he gradually reduced the strength of the carbolic washing-fluids to one per cent. Coincidentally, the proportion of sulphates in the urine increased, and there was an absence of high temperature and other symptoms of hitherto unknown origin. Now, as one to forty is the weakest solution that can be useful as a germicide, a one-per-cent solution could serve no good purpose, and the carbolic acid was omitted altogether. Afterward he tried doing without the spray, and results steadily improved. Of his last hundred ovariectomies, only three have been lost; and of the last seventy-eight, only one. But ovarian statistics do not apply to uterine operations.

DR. W. H. PARISH was present at the operation yesterday morning, and it was a complete illustration of what is necessary in all operations. First, in saving blood. Dr. Bantock was very careful to use hemostatic forceps to secure every bleeding point in the abdominal wound before opening the peritoneum. The same economy of blood was observable in every step of the operation. Great care was also taken to avoid shock from cooling the intestines by the contact of air and consequent evaporation; large, flat sponges were pressed in to cover the intestines and prevent their escape or the entrance of blood or discharges into the peri-

toneal cavity. He is extremely careful about the cleansing of his sponges before re-introducing them into the wound. In placing sutures, he first passed several silk-worm-gut stitches close to one another near the stump. After the wound was entirely closed, it was covered with clean absorbent gauze; a pile of this was placed over the stump. The whole was secured with a cotton-binder, using no adhesive plaster. So, while using no germicide at any time, every care was taken to make the operation an aseptic one. Would Dr. Bantock consider it safe to transfix, ligate, and drop the pedicle in case of uterine fibroid having a thin pedicle as long as a finger? Dr. Parish had done so on one occasion and the patient died.

DR. BANTOCK replied that a uterine fibroid with a finger-like pedicle he had never seen. He has observed none smaller than half his wrist. He thinks the extra-peritoneal method safer in every case.

DR. M. PRICE stated that, after the patient had conversed with Dr. Bantock, she felt great confidence in him, and said: "That is the man who can save my life."

DR. LONGAKER made some remarks about securing the peritoneum over the base of the stump, and asked what kind of suture Dr. Bantock preferred for that purpose.

DR. BANTOCK said that any kind of suture would do; it was merely to secure a neat stump that would not spread out over the wound. He prefers fine silk-worm-gut for sutures. He introduces his needle from within, close to the edge of the peritoneum, and makes sure of a hold in muscle or aponeurosis, and then through the subcutaneous fat and skin, to secure a firm hold, and prevent future hernia.

Stated Meeting, Thursday, October 6th, 1887.

The President, T. M. DRYSDALE, M.D., in the Chair.

DR. M. PRICE reported a case of

ADHERENT INTESTINES FROM PERITONITIS, SIMULATING FIBROID TUMOR.

Mary J—, colored, aged 17 years, received a kick in the belly from a horse about eighteen months ago. She was confined to her bed for a number of weeks, and was a confirmed invalid up to the time of operation, suffering great pain in the lower part of the abdomen—the region of the injury. She was unable to work or do anything toward her own maintenance. Upon examination, a hard mass was found high up and to the right of the uterus. Owing to her condition and the repeated efforts for her relief, it was decided to open her and see if the offending cause could be removed. I opened her June 17th, 1887. Drs. C. Penrose and J. Price assisting, and Dr. Wm. Welsh present. The bowels were found completely matted together with an ill-defined mass at the right side. Nothing was found that could be removed. The omentum could not be found. Dr. J. Price suggested the separation of all the old adhesions of the bowels, peri-

toneum, and mesentery, which I at once proceeded to do. These adhesions involved the entire length of the small intestine, binding the folds of the mesentery and knuckles of intestine in one solid mass. The adhesions were of such strength that many of them had to be cut through with scissors. The scissors, hand, and sponge were the instruments used in the separation of the adhesions. This method was followed until every knuckle of intestine and fold of peritoneum and omentum was separated. The bowel was almost completely occluded by the bands. Complete irrigation with distilled water, at a temperature of 110° , was used. After this operation was completed, the indurated mass could not be found. She reacted well and was freely purged with epsom salts. She made an uninterrupted recovery, and said she had less pain the day after operation than at any time after the kick. I have seen her frequently since the operation; she is perfectly well and able to be about her work. As a distinct surgical procedure, I know of no similar case on record. I opened a man, a year ago, for great pain in the region of the gall-bladder, and tore loose the adherent viscera from the abdominal wall, so as to complete my examination, but finding nothing wrong, closed up the incision; the pain was cured! But this operation was not performed with the same object in view as in the first case. Dr. Duncan, in his book on "Diseases of Women," p. 49, gives a case in point: "I remember a case diagnosed as a fibrous tumor of the uterus, a hard, rounded mass as big as a child's head, above the brim of the pelvis, very slightly tender and fixing the uterus. The young lady died, and at the post-mortem examination it was found that there was no fibrous tumor at all. It was adhesive perimetritis, a pocket of coherent intestines, which formed a hard mass, and had led to the deception of eminent and experienced gynecologists."

SPINDLE-CELLED SARCOMA OF THE OVARY.

By DR. M. PRICE.—Mrs. M., aged 44 years. Married twenty years, sterile: always regular, had always enjoyed good health up to January 1st, 1887, when she was greatly troubled with inability to hold her water and with constant pelvic pain with a feeling of fulness and an entire suppression of the menstrual flow which had been regular up to that date. The incontinence of urine was relieved about the middle of February by the escape of the tumor into the abdominal cavity. The tumor grew rapidly, and when it had reached some two inches above the umbilicus the patient thought she might be pregnant, and sought advice as to her condition. Upon examination I found the uterus small, the left ovary and tube healthy and posterior to the tumor. The right ovary could not be found, but in its position the pedicle of the tumor could be mapped out. The removal of the tumor was advised. Operation June 11th, 1887, with assistance of Drs. J. Price,

Burnes, and Penrose. A spindle-celled sarcoma of the ovary, weighing five pounds, was removed. The patient reacted well. On the evening of the second day, there was a slight rise of temperature and quickening of the pulse. Fearing peritonitis, I ordered a tablespoonful of epsom salts every two hours until the bowels were freely moved; six doses were given; the next day pains had disappeared and temperature and pulse were normal. She has made a perfect recovery.

DR. DRYSDALE remarked that a successful result of the operation in this case was a proof of its justifiability, but he thought that, generally speaking, it would be of doubtful advantage to perform abdominal section for the relief of the consequences of peritonitis, as adhesions would be likely to reform immediately after the operation.

DR. PRICE explained that the active movements excited by the epsom salts prevented new adhesions from forming. He made some remarks on solid ovarian tumors and stated that, although seeming to be of fibroid character and called fibroid at time of removal, microscopic examination had, in his experience, uniformly shown them to be spindle-celled sarcomata.

DR. PARISH remarked that it is always allowable to break up inflammatory adhesions in abdominal operations. The new adhesions formed are not firm.

DR. H. A. KELLY, a year ago, had examined a small tumor, about the size of a pea, distinctly arising from the ovary, and found it to be a fibroid; it was quite hard. He had, three months ago, removed from a girl of eleven years a large sarcoma of the ovary; she recovered. The intestines might be bound together into a mass by plastic lymph and if there was no unnatural position of any portion, no kinks nor strangulation, no symptoms would be developed. The patient would feel no pain and would be conscious of nothing wrong. In an operation, all bands and local adhesions should be broken up, and kinks or knuckles should be liberated.

DR. J. PRICE thinks the matting together of the intestines resulting from general peritonitis a cause of death in some few cases. He described a case which he had seen recently as consultant and in which he advised immediate operation. The attending physician would not consent until he thought his patient dying from peritonitis. The abdomen was now opened and the pus and lymph removed by irrigation and sponging; all adhesions were freed, and the patient commenced to improve immediately and is to-day a well woman. The operation was the only way in which her life could be saved. In his brother's case, the intestines were freed by free dissection, pressure was applied afterwards to hold the intestine back in the loins and keep them immobilized. The hemorrhage during these operations was very slight. Dr. J. Hoffman had, in a recent operation in which Dr. Price assisted him, found fourteen inches of the large intestines adherent in an operation for the relief of an umbilical hernia, requiring a long and masterly dissection. If such adhesions are not liberated, the operation of dividing the stricture and simply liberating the strangulated portion may be a failure in saving life. Here again Mr. Tait, in his deep surgical wisdom, recognizes the importance of opening the abdomen for strangulated hernia

in the median line, that inflammatory adhesions and strictures may be liberated in the most scientific manner. Adhesions in pelvic inflammations are very common, and in operations they should always be released. Hard bodies are frequently discovered in the tube and ovaries. Their appearance suggests fibroid growths, but they are in reality sarcomatous. The round ligaments alone do not seem liable to disease.

DR. MONTGOMERY was very much interested in the subject of this paper. The method of first breaking up the adhesions and then preventing their reproduction by peristaltic motion excited by saline purgatives is similar in principle to the treatment of ankylosis in joints; breaking up adhesions and passive motion subsequently. Doubtless all present can bear witness to the beneficial action of saline laxatives in dysentery and other inflammatory intestinal affections. He had recently assisted Dr. Warder in the removal of an abdominal growth. The diagnosis had been uterine fibroid, but when the abdomen was opened the tumor was found to be of ovarian origin. It was very large and hard. Dr. Daland had made an examination of it and reported it to be fibroid in character. There was considerable ascitic fluid.

DR. LONGAKER made some remarks on the clinical history of adhesions. Some months ago, the specimens from a case of obstruction of the bowels ending in death were shown by him at the Pathological Society. This was a case of encysted retro-uterine hematocele, the appendages on both sides being involved in the mass of adhesions, from which mass there passed a band to the lower portion of the descending colon, about nine inches above the sigmoid flexure, where it was so attached as to form an acute flexure. At this point the bowel was in a gangrenous state and the colon above was greatly distended, while the portion below the obstruction had a lumen just admitting the passage of the little finger. The patient manifested no symptom of difficulty until four or five days after labor, when some nausea and vomiting occurred. The points of interest are that, while the autopsy demonstrated the feasibility of an operation, the symptoms were at no time sufficiently definite to warrant a diagnosis. The patient must have had the trouble a long time without it giving rise to any but vague and indefinite symptoms. As involution of the uterus took place, this knuckle of bowel was slowly dragged down into the pelvis.

DR. M. PRICE, in closing, said the appearance of his first described patient was remarkable. The long-continued suffering from peritonitis had so wasted her that she looked as if she had been passed through a wringing machine; her chest and belly were flattened out. If no symptoms resulted from the adhesion, there would be no call to operate for their relief. But in all cases the intestines have sharp bends and curves and form knuckles which are caught under lymph-bands which tie the intestines together and contract them, and sooner or later symptoms of obstruction must be developed. He does not believe in antiseptic surgery as applied to the abdomen and the peritoneum. If he did believe in microbes and tadpoles and the other insects so much talked about, he would be afraid to operate, for their presence, if all that is said about them is true, would do more harm than the peritonitis, and more than the operation would do good.

DR. H. A. KELLY considered this a most important subject, and

one on which we are greatly in need of enlightenment. His own experience had taught him several interesting facts in regard to peritoneal adhesions. Bands of adhesion or the adhesion of a small area of intestine in such a way as to make it liable to kink, doubling it sharply on itself, are exceedingly dangerous and should never be allowed to remain. But there is a class of adhesions by no means dangerous, not productive of symptoms, and which should not be interfered with. We must bear in mind that the adhesion of opposing serous surfaces is a conservative process preventing the continuous pouring out of effusion, and in event of tuberculous peritonitis probably starving out the disease by taking away its pabulum. The least dangerous variety of adhesion is the general adhesion of the gut in situ. He operated two years ago on a case in which all the intestines adhered, looking like one great bag when the peritoneum was opened. It was a case of tubercular peritonitis tending to a cure in this way. I simply dried out the peritoneum and besprinkled it with iodoform to check secretion, and the patient, who has been constantly under my eye ever since, has had no trouble from her adhesions. Also those cases of adhesion of lesser intestines in the pelvis, in which they lie adherent in normal relative position in full round curves without kink, do not, so far as I have been able to observe in a large number of cases, ever do harm.

DR. H. A. KELLY read a paper on

PALPATION AND SOUNDING OF THE FEMALE URETERS,

in which he stated that he made it his routine practice to examine all gynecological cases with reference to the condition of the ureters. Since Dr. Sänger had demonstrated to him, in the summer of 1886, the facility with which both ureters could be outlined through the anterior vaginal wall and traced back to the posterior pelvic wall, the speaker had made a long series of confirmatory observations and in some instances demonstrated the value of such observation by finding disease of the ureters. Dr. Kelly had added to this a method of his own by which the ureter is picked up and handled bimanually, and with the exact knowledge thus gained as to its position, he then proceeds to catheterize it with Pawlik's catheter. He detailed a case in which the catheter was thus introduced free hand into the ureter and passed back to the post-pelvic wall. The urine escaped in little gushes of from ten to fifteen drops every ten or fifteen seconds, evidently accumulating beyond the catheter until the pressure became sufficient to dilate the ureter and let the urine pass down into the eye of the instrument. About three drachms of urine were drawn in this way, and on removing the catheter, about five ounces of urine were drawn from the bladder. A disadvantage of Pawlik's catheter is that the sharp eye sometimes catches and tears the mucous membrane of the ureter.

Dr. Kelly showed some sounds which he had had constructed some time since when studying this subject, but considered them inferior to Pawlik's instrument. The value of knowledge which

may thus be gained was illustrated by reference to a recent case of severe operation, removing adherent, pus-containing ovaries and tubes. On the second day, urine appeared in the tube and flowed freely. The only way of determining from which kidney this flow came is by catheterization of the ureter.

DR. CHAS. M. WILSON thought that such an instrument used in cases with a history of pyelitis might be the cause of serious trouble. He has tried in a number of cases to palpate the ureters by Dr. Kelly's method; in a few elderly women he has succeeded, but in nulliparæ with firm tissues he could not distinguish the ureters.

DR. J. PRICE considered these methods of examining the ureters of but little practical use, for trouble does not exist in the ureters alone, but in all the pelvic organs and kidneys, and when they are distorted by new growths and inflammatory products, it would be very difficult to locate the ureters. The case cited by Dr. Kelly in his own experience shows how difficult it is, even with the fingers in the pelvis, while removing diseased appendages, to locate the ureters through one layer of peritoneum, to say nothing of the conditions when we have to deal with inflamed and thickened vaginal walls.

DR. MONTGOMERY thought it would require extreme skill to pass such fine instruments without doing injury to the mucous membrane. Dr. Bozeman, in a paper read before the Ninth International Med. Congress, recommended dilatation of the ureters and washing out of the pelves of the kidneys and ureters in pyelitis; even advising splitting of the bladder through the vagina in order to reach the orifices of the ureters.

DR. WALKER was very much interested in this subject and has been desirous of accomplishing this procedure in some patients that he had in his care in the Philadelphia Hospital. He had succeeded in palpating the ureters in males, but not in females. This ability to pass a catheter into the ureter will enable the surgeon to determine in any given case which kidney is diseased.

DR. KELLY, in closing, offered his services in sounding ureters to any member of the Society interested in following up the subject. As for danger, there is none; the instrument must be lightly poised between thumb and fore-finger and gently pressed in, or not at all; the sensation when the end of the catheter is caught by the ureter and it begins to pass up the tube is characteristic. Dr. Walker is certainly correct in his high estimate of the great value of the possibility of sounding the ureters free-hand in certain puzzling renal cases. As to Dr. Price's remark, cases in which there is much pelvic cellulitis are not those in which we desire to sound the ureters. Ureteritis is a distinct, well-defined disease. He treated one case which he cured by opening the base of the bladder. The whole trouble lay in the extremities of the ureters. The first to suggest splitting the vesico-vaginal septum, and thus under guidance of the eye catheterizing the ureteral orifices, was Dr. Emmet. Pawlik's work was but the culmination of a vast number of attempts to accomplish this; from Tuchmann who attempted to clamp the orifices of the ureters, and Silberman who tried to choke them by a bag of quicksilver, and Simon's dilatation of the urethra, and Nouman and Grünfeld who tried to reach it by endoscopic methods. Sän-

ger showed how readily the ureters can be palpated, and I think by combining a careful bimanual palpation according to my own method, and following this with a free-hand catheterization of the ureters already so distinctly located, I have added a method of real value, simplifying this difficult subject. It is not true that great skill is required to thus palpate the ureters. I can teach any one to do it.

DR. HIRST reported a case of

TYPHOID FEVER IN A PREGNANT WOMAN.

The impression still prevails in some quarters among general practitioners that typhoid fever will not attack a pregnant woman; an idea originating doubtless in the teaching of the famous Rokitsansky, who believed that the condition of pregnancy granted a woman immunity from this disease. It is unnecessary, of course, to point out the fallacy of this opinion or to refer to the statistics of 322 cases of typhoid fever during pregnancy collected by Charpentier. The case that I would report occurred in a young primigravida who was admitted to the Philadelphia Hospital in the second week of the attack. The disease presented all the characteristic symptoms in a typical manner, leaving no doubt as to the diagnosis. On the tenth day after her admission to the Hospital, the woman gave birth to a child which corresponded in its development to the seventh month of intrauterine life. The infant died two weeks after birth, but, unfortunately, the cause of death was not ascertained. An interesting feature in this case was the effect of labor upon the temperature. As uterine contractions began, the woman's temperature was 104.2°, but it steadily lowered as labor advanced until directly after the expulsion of the child it was only 95°. Under the influence of external heat and stimulants hypodermatically, the patient reacted and made a good recovery.

DR. LONGAKER remarked that Dr. Hirst deserved credit for bringing this subject forward. We are perhaps too much in the habit of regarding with suspicion cases of typhoid fever in the puerperal state. His experience had taught him that high temperature in typhoid fever in the pregnant woman was incompatible with fetal life. He had been recently associated with such a case which ended fatally.

DR. CHAS. M. WILSON had under his care a pregnant woman with typhoid fever in whom the temperature was as high as 106+° and was not reducible for several hours, but the child survived and was delivered alive at term. Numerous similar cases are on record, so a temperature as high as 106+° is not necessarily fatal to fetal life.

DR. MONTGOMERY remarked that in the majority of cases maternal typhoid fever is fatal to fetal life. Premature labor has occurred in all such cases that have come under his notice. In one such case the temperature rose to 105° and miscarriage occurred and was followed by a fall of temperature to 97° with collapse, from which it was very difficult to restore her. The tem-

perature again rose to 105° and after a protracted illness the patient recovered.

DR. W. S. STEWART remarked that in one case of typhoid fever, about the sixth month of pregnancy, in which the patient became emaciated to a remarkable degree, she recovered and was delivered of a living child at term. The temperature did not rise very high.

DR. J. C. DaCOSTA stated that these cases do not all abort or die. He recalled one case in particular with a temperature of 105½° with characteristic typhoid eruption and intestinal hemorrhage; four stools containing each from one to two pints of blood having been passed; which went on to full term, twins being delivered alive.

DR. HIRST, in closing, stated that although the temperature of his patient remained at 95° for over twelve hours despite all that could be done to raise it, she did not appear in collapse, but looked and felt quite comfortable. The prevalent idea as to the danger to the fetus of high temperature in the mother would appear to be erroneous. Runge's well-known experiments are often quoted to support the view that the fetus is in danger if the mother's temperature reaches 104°; but Doléris in 1883 showed that if the maternal temperature is gradually and not quickly raised, the fetus remains unaffected. Runge in a second set of experiments found that Doléris's conclusions were correct. Preyer on one occasion actually found a temperature of 111° in the anus of a living fetus.

DR. PARISH considered that the high temperature in disease was accompanied by blood changes which contributed to the fatal result.

DR. J. M. BALDY read a paper on the administration of

SALINES IN PERITONITIS FOLLOWING ABDOMINAL SECTION.

Twenty-five per cent of the deaths following abdominal section are attributable to peritonitis (Agnew). Taking the hint from Mr. Tait, I never take any steps to prevent a movement of the bowels after operation and routinely administer salines on the second or third day, repeated in small doses, especially when there is distention and persistent bilious vomiting. The results following this course have been most satisfactory. I have used salines in large concentrated doses, $\frac{z}{i}$ repeated several times and aided by large, two quarts, turpentine enemata in fully developed peritonitis, with the best results. The symptoms begin to subside almost immediately when the bowels commence to discharge watery stools. The treatment is in every way preferable to the use of opium and is logically infinitely better than the narcotic. Opium only does good by relieving pain, at times, in enormous doses. The bowels are already "in splints" from the disease and do not need the aid of the drug for that purpose. Opium, however, does a world of harm. It helps to keep the bowels in splints and so favors the formation of those great masses of adherent intestine and organized bands which we find so often the cause of subsequent intestinal obstruction. Still worse, it closes all the

avenues of escape for the poisonous products of inflammation found in this great lymph sac, and in this manner keeps up the inflammation much more surely than the rubbing together of the peritoneal surfaces will. With salines, however, an active peristaltic movement is kept up which tends to prevent the formation of adhesions and bands. They drain the abdominal cavity of the products of inflammation and by depleting the blood-vessels of the intestines and peritoneum tend to prevent the throwing out and organizing of lymph to any great extent. There are, of course, dangers in the production of large watery stools, but the treatment must be used with care and judgment. I would suggest that in the after-treatment of abdominal section the bowels be moved as a matter of routine on the second or third day after operation. That on the first access of pain and soreness with distention, a brisk purgative be given at once. In case a general peritonitis is developed, the production of large watery stools should be secured as quickly as possible by purgation and stimulant enemata: the amount of purgation to be controlled in accordance with the strength of the patient. The salines, as suggested originally by Mr. Tait, are perhaps the best of the purgatives for the purpose.

DR. WATSON remarked that Mr. Tait had been led to the use of salines because he had always observed bloody serum in the peritoneal cavity after death from peritonitis. Dr. Watson has been in the habit of using saline laxatives whenever he has found signs of beginning peritonitis after labor. Once after craniotomy, and again after a very difficult labor, he found their use of very decided benefit in cutting short threatened attacks of peritonitis; both cases had good recoveries.

DR. LONGAKER remarked that Dr. Bantock, while in this country recently, expressed entire want of faith in any benefit to be gained from the use of salines in peritonitis.

DR. PARISH explained that peritonitis, as seen by Dr. Bantock, was always of septic origin and the patients would die under any treatment. That form of peritonitis is preventable. The saline treatment is quite reasonable; it is an adaptation of an old method of treating dysentery and inflammatory diseases of the intestines.

DR. WALKER had employed salines as depleting agents in various inflammatory diseases. When the depletory action is desired, concentrated solutions should be administered. A weak solution will act simply as a laxative.

DR. CLEEMANN had had success and failure with both the opium and saline methods of treating peritonitis. Salines had been recommended years ago by Dr. Meigs in the treatment of peritonitis. Several successive attacks of typhlitis in one patient had been subdued under the use of opium. A case of peritonitis under his care had shown progressive relief after every movement of the bowels, the result of a dose of castor oil. As the opium treatment has been adopted by the majority of physicians, it is presumably the best.

DR. KELLY cordially indorsed the general tone of the paper, and believed that serious consequences will often be avoided by

timely free depletory purgation. He had used calomel and soda, but now considered salines better. All peritonitis is not, however, as the speaker would urge, to be so treated. There is a dry form, which I have verified by post-mortem examination, which corresponds to the friction dry stage of pleurisy, which is better treated by opium. We must bear in mind that the depletion of the intestinal villi only quickens the absorptive activity of the peritoneum, and a large accumulation within the peritoneum may readily be too great to be thus disposed of. Here the drainage tube saves lives by disposing of the excessive and often unavoidable serous weeping from wounded peritoneal surfaces. I call this my *fifth emunctory*, and it is better than all the natural emunctories in these cases, when properly handled, disposing of accumulations at once, without in the least taxing the powers of the patient. Next to the drainage tube the best emunctory is that nearest the field of activity, the intestinal tract, and next, but much inferior to this, come the kidneys, then the skin, and lastly the lungs.

DR. MONTGOMERY resorts to closely restricted food and drink and the administration of concentrated doses of salines in commencing or threatened peritonitis. He adopted this method at the Med. Chir. Hosp. recently in a case of peritonitis consequent on the pressure of a malignant tumor which could not be removed. He did not use a drainage tube, but kept the patient on restricted diet and drink, applied a light bandage and administered salines.

DR. J. PRICE thought the preparatory treatment of paramount importance in abdominal surgery. After an operation opium is simply harmful, while salines are soothing to the patient and prevent flatulent distention. Upon the slightest indication of peritonitis, use them freely and it is simply wonderful what rapid disposition is made of the thirty-seven varieties, according to Sternberg, of rhizopods and boa-constrictors. Again, the drainage tube is of the greatest importance in preventing peritonitis. It usually does its work, if managed well, in the first twelve or twenty-four hours.

DR. BALDY does not think there is such a thing as dry peritonitis. The idea of administering salines is to deplete, and concentrated solutions should be used. The use of opium by the majority does not prove it to be correct.

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL SOCIETY.

SECTION XVIII. OF THE SIXTIETH ANNUAL MEETING
OF GERMAN NATURALISTS AND PHYSICIANS.

HELD IN WIESBADEN, SEPTEMBER, 1887.

(Translated from the *Centralblatt f. Gyn.*, Nos. 41 et seq.)

The section organized under the Presidency of Dr. Diesterweg, of Wiesbaden, on Monday, September 19th, 1887. After welcoming the members in attendance, the President referred in feeling words to the demise of the late Prof. Schroeder, in honor of whose memory the Section rose from their seats in a body.

Tuesday, September 20th, Morning Session.

PROF. AHLFELD (*Marburg*) in the Chair.

DR. BUMM (*Würzburg*) read a paper on

MIXED GONORRHEAL INFECTION IN THE FEMALE.

The term "mixed infection" means the penetration of two different kinds of micro-organisms. The usual process is that at first one species excites morbid alterations in the organ invaded, and on the territory thus prepared the second species takes root. Thus, as a lung affected with pneumonia furnishes the best soil for the penetration and development of tubercle bacilli, so the same process may be observed in the most manifold ways in gonorrheal infection of the female genitals. B. considers the various regions of the female genital tract which come under observation in this respect. Thus the frequent so-called simple Bartholinitis is by no means due to the gonococcus as such, as B. has demonstrated in the most convincing manner, but to germs subsequently entered, whether it be the staphylococcus pyogen. aureus or putrefactive bacteria which led to suppuration or cyst-formation with offensive contents in the gland affected with gonorrheal disease. The small abscesses in the urethral wall which are occasionally observed in the course of gonorrhea are always caused by the later entrance of micro-organisms which directly produce suppuration. Nor is there a true gonorrheal cystitis, as was formerly generally accepted; the gonococcus alone causes no cystitis; this is done only by other microbes which penetrate into the bladder in connection with the disease of the urethra. On the same processes are based the inflammations in the parametran cellular tissue occurring as sequels to gonorrhea, and even the

disease of the distant joints. It is probable, too, that many cases of isolated tubal tuberculosis depend upon this mixed gonorrheal infection.

In connection with the preceding paper, DR. KRONER (Breslau) presented an essay on

THE RELATIONS OF GONORRHEA TO THE GENERATIVE PROCESSES.

He reported on the early and the late puerperium of ninety-seven mothers and children, the majority of the latter being undoubtedly specifically gonorrhoeic, and cautioned against overestimating the injurious influence on the one or the other in the sense of Nöggerath and Sänger. A positive demonstration of the gonorrhea in the parturient by a bacteriological examination of her genital secretion, or a specific ophthalamo-blennorrhea of her child, is pre-eminently necessary.

On the strength of his investigations, Kroner holds as unfounded the belief that gonorrhea is injurious to pregnancy so as to give rise frequently, like syphilis, to abortion. He is equally sceptical with reference to the frequency of sterility traceable to gonorrhea in the female and emphasizes the importance of examining the man in every case for azoospermia or oligozoospermia due to gonorrhea on his part.

DR. KUGELMANN (Hanover) inquired whether inflammation of Bartholin's gland is always preceded by gonorrheal infection. (Answered in the negative by Dr. Bumm.) K. believes that, according to his experience, parametritis after gonorrhea is of rare occurrence.

DR. KALTENBACH (Halle).—Mixed infections play an important part not only in gynecology, but also in obstetrics. This is shown by the atypical course of many diseases of parturition which renders it difficult to make a correct prognosis. Combinations of infectious and intoxication processes are likewise frequent. The connection between puerperal parametritis and gonorrhea is confirmed clinically. Ophthalamo-blennorrhea neonatorum and a pyrexial course of the puerperium (endometritis and parametritis) have also been frequently observed with imperfect prophylactic measures.

DR. SAENGER (Leipsic) read a paper on

RECENT (ENGLISH) METHODS OF PERINEORRHAPHY BY DIVIDING THE RECTO-VAGINAL SEPTUM AND FORMING FLAPS.

In the beginning of the present year, S. became acquainted, through a Danish physician, with Lawson Tait's latest method of operating for lacerated perineum and prolapsus, and has employed it thus far seventeen times with the best results: seven times in various degrees of vaginal and vagino-uterine prolapse, three times in old chronic perineal laceration, and seven times in incomplete rupture. S. demonstrated the method plastically on an alcoholic specimen in a frame and paper phantoms. In brief the *modus operandi* is as follows;

1. In incomplete perineal rupture. A cotton tampon is introduced into the rectum. The recto-vaginal septum is divided with pointed bent scissors in a transverse direction to a depth of about $1\frac{1}{2}$ cm., and a width of about 3-4 cm. From the terminal points of the transverse incision two lateral cuts are made at right angles to the latter about as far as the labio-nymphal border. The vaginal flap thus circumscribed is folded upwards, thus producing a nearly square wound-surface, somewhat rounded above. The stitching is done in a transverse direction by means of Peaslee's needle and silver wire, the needle passing in and out exactly at the border of the wound with the skin; three or four suffice. Between them come some superficial silkworm-gut sutures which include the skin. Iodoform after-treatment. Removal of the superficial sutures on the seventh, of the deep sutures on the fourteenth day.

2. Procedure in the higher degrees of vaginal prolapse. After preceding amputation of the cervix (or Emmet's operation, or excision of the cervix, according to circumstances), anterior and posterior colporrhaphy, the latter without inclusion of the perineum, the operation is the same as under No. 1. Only the lateral incisions are carried further forward, so that after the sutures are knotted, the introitus vaginae becomes narrower and the perineum higher and firmer. Mere episio-perineorrhaphy without simultaneous plastic operation in the vagina and on the cervix, as done by Lawson Tait, is insufficient.

3. Procedure in complete old perineal rupture. First, transverse division of the recto-vaginal septum, best by means of the scalpel, then lateral circumscription of a vaginal flap, as under No. 1. These incisions are prolonged backward to the point containing the lacerated sphincter ani, thus limiting a rectal flap. The incisions in this way form the figure of an H, and after the two flaps are folded over, an approximately square wound surface results which is united as under Nos. 1 and 2. Neither vaginal nor rectal sutures are inserted; all sutures are put in from the perineum; thus the formation of recto-vaginal fistulae is absolutely excluded.

This circumstance, the facility and rapidity with which the flaps are formed (Lawson Tait consumes only four minutes for the whole operation), and the simplicity of the suture, make the method appear as a real advance in perineoplasty; also because it can be easily learned by the general practitioner, rather than the difficult and complicated procedures resting on denudation by the removal of tissue.

DR. COHN (Berlin) read a paper on

THE PRIMARY AND FINAL RESULTS OF PROLAPSUS OPERATIONS.

The author's conclusions are based upon the results of altogether 195 prolapsus operations, partly performed in the clinic

by Prof. Schroeder between August, 1882, and the end of February, 1887 (88 cases), partly in his own practice (17 cases). A total of 123 colporrhaphies were performed on these 105 prolapsus cases. All were stitched with the uninterrupted catgut suture (Thiersch's catgut). The operation was invariably done under irrigation, and the bowels kept locked by opium for ten or twelve days after. In 97 cases the cicatrix was absolutely linear; 24 had small defects which did not alter the general effect; 2 were failures. The prolapse as such resulted as follows: in 9 cases (8 clinical, 1 private), poor result; in 80 cases (65 clinical, 15 private), good results; in 9 cases, moderate result; in 4 cases, unknown; in 2 cases, fatal result after operation, once by chronic nephritis and heart failure, once by profound exhaustion. In 60 cases, the author was able to determine the final result; only 34, that is 57%, remained permanently cured. In 23 cases, prolapse had recurred; of these only one had been operated on outside of the clinic.

The author thinks the further employment of the uninterrupted catgut suture cannot be too warmly recommended. It almost absolutely insures the primary, linear union of the wound. The cause of the numerous relapses must certainly be sought elsewhere, especially in the conditions of life of most of the patients.

DR. FRANK (Cologne) read a paper on

PROLAPSUS OPERATIONS.

Dr. Frank endeavors to give greater power of resistance to the vagina (which during prolapsus has to carry not only itself, but must serve as a prop to the uterus) in the following manner, which indeed differs materially from the methods hitherto in use, and thus to arrive at a cure of the prolapsus. Horseshoe-shaped incision in front of the anus, detachment of the entire posterior vaginal wall from its support, excision of a corresponding piece from the entire posterior vaginal wall; then commencing in the depth of the wound, drawing together of the connective tissue surrounding the vagina and rectum. After that the corresponding vaginal suture is inserted and the perineum closed in the usual manner with silver wire. Tension of the vagina is impossible in this method, because the catgut sutures running behind it relieve the tension. Since the end of 1881, the author has ceased to remove any tissue, and merely placed the detached posterior vaginal wall together by dropped catgut sutures in such a manner that a thick ridge arises towards the lumen of the vagina, the top of which is formed by the rugous column. The connective tissue lying laterally from the vagina and rectum is united under the ridge as above mentioned. Dr. F. is well satisfied with his results; he has never seen a relapse of the prolapsus, not even after four succeeding deliveries in one case. The principle involved in the operation is, to give the vagina more intimate connection with the neighboring organs.

DISCUSSION OF THE THREE PRECEDING PAPERS.

DR. HEGAR (Freiburg).—There is a good reason why the plastic operations on the genitals never gained a foothold in England. The methods hitherto tried in that country were defective, the denudation and insertion of the sutures were done much too hastily in order to appear brilliant by rapidity. Instead of being stimulated by the excellent results to make themselves familiar with the perfected German methods of operation, the English again resort to flap operations. H. could not believe that a perineum which Tait, as stated, repairs in four minutes could even distantly compare with one operated on in the German fashion. He even doubts the advantage claimed for Tait's method, that, should failure ensue, the conditions simply remained as before, since no tissue was removed. The flaps, in H.'s opinion, receive too little attention, are almost floating in the air. They undoubtedly shrink—a fact which might result disastrously, especially in complete ruptures. Where the rupture is incomplete, the method might be very good, but so is almost every other one in that condition. H. thinks that the method can be of no account as regards the cure of the prolapsus, since, as Tait does it without preceding preparatory operation (see Saenger's statement above), it affects only the vaginal ostium or the lowest portion of the recto-vaginal wall. Whether the occurrence of vagino-rectal fistulæ is indeed so certainly prevented by the method appears very doubtful to H.; on the contrary, the mode of inserting the sutures seems to him to favor the gaping of the upper portions of the wound.

With reference to Cohn's paper, H. expresses his surprise that no larger number of prolapsus operations had been performed at the Berlin clinic. This can be due only to a lack of confidence in the operation by the people. In the small city of Freiburg, he performs a much larger number of operations, and not only for fully developed extensive prolapsus, but also those in the initial stage. Of course, it must be openly confessed that the reported results from the Berlin clinic are not conducive to inspire confidence, either as regards the primary or final recovery. The causal factors inculcated by the author (Dr. Cohn) as preventing healing by first intention, such as irrigation with carbolic or sublimate solution, defective suture material (silk), rolling in and folding of the tissue in the depth of the wound, would not be accorded so much weight by H. The disadvantages can be avoided by very accurate sutures running parallel with the wound, by half-deep sutures, and excision of the redundant tissue during the insertion of the sutures. H. has not tried the uninterrupted suture. He has merely been informed that in Berlin often a considerable number of silk sutures are applied after the placing of the running suture. Locking of the bowels after the operation certainly is not good practice, and is superfluous besides. Even in the case of complete rupture, laxatives may be safely given on the third or fourth day.

DR. KALTENBACH (Halle) is not quite so sceptical as Hegar with reference to Tait's method, as recommended by Saenger. In prolapsus operations, of course, it can only come under consideration as an adjuvant operation. The fact that no tissue is lost is of importance only in complete perineal rupture, since in prolapsus there is usually a redundancy of tissue. At all events the opera-

tion deserves to be thoroughly tried also in Germany. K. then explained his views on the points touched upon in Cohn's paper. According to his experience, the suture material has nothing to do with the result. K. has equally good results with silk, catgut, and wire, as well as with the uninterrupted catgut suture.

DR. MERMAN (Mannheim) expressed some doubts on a few points made by the preceding speakers and laid particular stress on the fact that, in judging the final results attained in prolapsus operations, the prolapses as such should not be taken into account, but those forms should be separately considered in which the descent affected mainly or exclusively the anterior vaginal wall with the formation of a pronounced cystocele; in these the prognosis is decidedly worse than in the other forms.

DR. VEIT questions the priority of the method now ascribed to Lawson Tait. Years ago he had seen the same operation performed by Wilms in Berlin; of course, more frequently conjoined with the resection of small lateral cutaneous flaps. The method has also been published, though badly and incomprehensibly. Moreover, in these operations performed by Wilms, recto-vaginal fistulae had remained behind.

DR. FEHLING (Basle) asked Dr. Cohn what he meant by relapses after prolapsus operations; it makes a great difference whether the operation is done for defective sphincter, for hypertrophy of the uterus, or for relaxation of the connective tissue. In the first instance, we must expect certain cure from a good method; in the other two cases, the uterus might again prolapse in spite of the greatest narrowing of the vagina. In computing statistics, these points must be borne in mind. As to the suture material, he, too, thought it irrelevant. He had had about one hundred prolapsus operations; in a small number of them he had employed the running catgut suture. The results obtained herewith having been worse than the others, he had gone back to wire or silk. However, the poor success can only be ascribed to lack of experience. After-hemorrhages he had observed in one case, owing to irrigations, which he now omits for that reason. Spouting vessels or larger veins are ligated.

DR. COHN (Berlin) sought to controvert Hegar's supposition, that in Berlin so few prolapsus operations come under treatment because the people have no confidence in it, by pointing out that in Freiburg everybody must go to one clinic; while in Berlin a patient to whom an operation was proposed went from one clinic to another. If he recommended the running catgut suture as a good means to secure healing by first intention, he did not thereby deny the possibility of obtaining good results also with other suture material. The frequency with which prolapse recurs in spite of good union of the parts justifies the question whether in these grave cases it would not be advisable to fasten the uterus to the abdominal wall at the same time.

DR. SAENGER maintained that Lawson Tait's method was deserving of actual trial by German gynecologists. When conjoined with posterior colporrhaphy, we obtain indeed not only a very firm, serviceable perineum, but also one answering every cosmetic requirement—a fact which can be attested by his assistant Dr. Donat and by Dr. Binder (Plauen), then present, on one of whose patients Dr. S. had been asked to operate. As the best suture material he recommended silkworm-gut, used in the interrupted suture.

The objection raised by Dr. Ziegenspeck (Munich) that every perineal operation must endeavor to restore the parts as much as possible *ad integrum*, that Tait's method did not do so and therefore was a failure *à priori*, was decidedly opposed by DR. MEINERT (Dresden). The method did just what Dr. Z. had denied—it restored the parts to the condition existing before the rupture. The flap lying at the upper end of the suture caused absolutely no disturbance. Of fifteen cases operated on, M. obtained healing by first intention in fourteen.

DR. MENSINGA (Flensburg) read a paper on

DEFECTIVE LACTATION AND THE REMEDY FOR IT.

Every physician is becoming convinced that the number of mothers able to nurse their own children is decreasing. The great many new infant foods recently brought into the market furnish the best evidence of the evil. It is the physician's duty to aid here in every possible way, and the speaker called upon all members present to assist him in the endeavor.

The cause of the increasing inability to nurse may be sought in three factors: 1. Peripheral, general causes, weakness, chronic diseases, acute febrile diseases, etc.; 2. Central or psychical (defective innervation, etc.); 3. Organic or local: *a.* disease; *b.* defective development of the mammae.

M. deploras, as coming particularly under consideration with reference to point 3, the mechanical restriction of the development of the mammae exerted even in youth by the clothing. M. showed by illustrations how simply he rendered one of the customary girl's dresses harmless. A vertical incision on each side over the entire region occupied by the future mammae affords room at these points, and the cut can be filled in in some way or other to satisfy the sense of beauty. For later years he recommended the insertion of closely perforated rubber cups between corset and thorax; this causes venous stasis underneath, for which he employs appropriate massage, and by this alternation he secures active vitality of the glands. Massage was also recommended for the opposite condition—galactorrhea.

There was no discussion.

[To be continued.]

REVIEWS.

LEHRBUCH DER KINDERKRANKHEITEN FÜR AERZTE UND STUDIRENDE.—TEXT-BOOK OF DISEASES OF CHILDREN FOR PHYSICIANS AND STUDENTS. By DR. ADOLF BAGINSKY, Docent at the University of Berlin. Second Edition, 1887. (Wreden's Sammlung kurzer medicinischer Lehrbücher.)

Although the number of works on diseases of children is by no

means small, there are few which are as well suited, both to the want of the general practitioner and the specialist, as this work of Baginsky, the second edition of which is now before us. The general practitioner, especially, cannot expect to find a better book on this subject. The author has endeavored to present the whole subject in a clear and concise way, and though certain parts might be improved upon, the book, as a whole, leaves little to be desired.

It is divided into two parts, a "general" and a "special."

The first part is very short. In it the author describes the physiological peculiarities of the child, the growth, nourishment, examination, and general treatment. The chapters on "nourishment" and "examination of the child" are described in detail. The more recent investigations in regard to the mother's milk are given, and the values of the different substitutes for human milk are clearly stated, so that the practitioner who, on account of the great number of such substitutes, is often in doubt which one to choose, will be greatly helped.

In the second, or "special" part, the etiology, pathological anatomy, symptoms and course, diagnosis, prognosis, and therapy of each disease all receive attention. Certainly the best parts, and they are worked out in a masterly way, are the chapters on the symptoms and course. Here the author shows that he is a clinician of vast experience and an excellent observer, who is able to offer a young practitioner many valuable hints. In the chapter on etiology, the author calls attention to the latest bacteriological researches. The chapters on pathological anatomy are less complete, but he has never failed to mention the more essential points; those on diagnosis and prognosis are short, but clear and concise. To the treatment the author has devoted a great deal of attention, and has endeavored to give the latest methods.

The first diseases described are those of the new-born child, and here B. gives many of the more recent investigations.

A very good, but at the same time extremely incomplete, chapter is that on the acute infectious diseases. Scarlatina, with its many complications, is well and minutely described. The doubt as to the causative factor of nephritis when occurring as a complication is as yet unsolved; the most probable is the connection which B. has experimentally shown to exist between the suppression of the function of the skin and the kidney lesion. The supposition of a cold being the cause of the nephritis he regards as a mere excuse. Here we cannot agree with the author. How would he explain the cases which go along splendidly and are pronounced by the attending physician as out of danger, where the child is exposed to a draught, the next day has albumin and casts in the urine, where general edema develops, and two days later the child is dead? These cases are, unfortunately, by no means rare, and it cannot too strongly be urged upon parents to carefully guard their children from any draughts. In the treatment of scarlet fever we entirely agree with the author as to the very slight effects of the cold baths, and that if these baths are protracted, the patients collapse and die from failure of the heart's action. We cannot, however, agree with him as to the advisability of cold packs, for we have too often seen bad results from it, and more than once nephritis has been caused by the

injudicious use of them. On the so-called specific remedies B. justly places no reliance. Stimulants and subcutaneous injections of ol. camphorat. or spirit camphor (camphor gr. i., ʒi. spirit. vini and aq. āā and tr. moschi gr. viij.) are the most reliable.

In regard to variola the author says: "With the introduction of general vaccination small-pox has lost its significance to children. Since the year 1871 I have not seen true variola in children, and even the milder form, varioloid, seldom comes under our observation." Accordingly he does not speak of true variola. Unfortunately this experience of the author does not hold good in other countries, and, though small-pox is very rare with us, yet occasionally a small epidemic breaks out, and then children are even more prone to it than adults; in vaccinated children the severer forms of varioloid are, in such an epidemic, pretty apt to occur. It is an unpardonable fault in a text-book not to describe this extremely important disease, and we sincerely hope that the author will not allow a third edition to be incomplete in this particular.

At the end of the chapter, on the exanthemata, the author gives a short, precise description on the appearance at the same time, or in rapid succession, of two acute exanthemata.

After describing the typhoid diseases, B. gives accurate pictures of meningitis cerebro-spinalis, erysipelas, tussis convulsiva, diphtheria, cholera epidemica, mumps, dysentery, and intermittent fever.

The three diseases making up the chapter of chronic infectious general diseases are scrofulosis, tuberculosis, and syphilis. By the discovery, in recent years, of Koch's tubercle bacillus, the great similarity which exists between scrofulosis and tuberculosis has been demonstrated, and quite a number of authors regard the two processes as identical. Scrofulosis, however, provides only the proper soil for the different microbes: it is a peculiar condition of the organism, which can as yet not be more closely defined, in which the germs and, above all, the tubercle bacilli find a favorable soil for their growth.

In the treatment of hereditary syphilis, the author prefers sublimate baths to anything else, and he has never had a failure, but always quick and certain cure. Children up to 1 year receive eight grains of corrosive sublimate for one bath. In condylomata lata, the author has had absolutely no success with iodoform powder; he prefers the use of sublimate, gr. i.; aq. and spirit. vini, āā ʒij.

The diseases of the nervous system are described in a masterly way. The author commences this part with an anatomico-physiological introduction, in which we find all the more recent researches on this subject. This introduction will be of great value to the beginner, and will greatly aid him in the study of the pathological changes.

Chorea, the author says, only rarely commences with prodromata, but is usually ushered in very suddenly. This is rather contrary to the experience of others, for the disease, as a general rule, commences slowly, and is preceded by prodromata for days or weeks, during which time the children will complain of headache, be anemic, have jumping pains in different parts of the body, no appetite, etc., and even at this time extremely

slight, hardly perceptible muscular contractions will be noticed, which can easily be overlooked. In the treatment of chorea, B. advises warm baths, from which he has often seen good results.

The progressive muscular atrophies of a myopathic nature are also well described. As such he mentions pseudohypertrophy of the muscles (*atrophia muscularis pseudo-hypertrophica s. lipomatosa*), the juvenile form of progressive muscular atrophy, according to Erb, and the progressive muscular atrophy of children, with participation of the facial muscles, as first described by Landouzy and Déjérine.

Among the anomalies in the course of acute genuine pneumonia, B. classes: 1st, abortive pneumonia; 2d, pneumonia migrans; 3d, pneumonia gastrica; and 4th, cerebral pneumonia. With this classification we cannot entirely agree, and do not think that it is of any advantage. In the treatment of pneumonia, the author does not advise cold baths, as they are used by Jürgensen; should the fever continue high, cold applied to the thorax alone is much more preferable. Antipyretics internally are to be especially guarded against; if they must be used, antipyrin, 1 : 100, or chinin in full doses are the best, but he warns against the use of *natr. salicylicum*.

One of the best chapters is that on the diseases of the stomach and the intestines, which the author, aided by his great experience, describes minutely.

The chapters on the diseases of the kidney, the bladder, and the sexual organs are short but clear, though the parts on the pathological anatomy, and especially the examination of the urine, are perhaps not dwelt on sufficiently.

The least satisfactory part of the whole work is the part treating of skin diseases. Though the author describes all of the diseases with which children are apt to be troubled, the treatment of them, not to speak of the pathology, which he hardly mentions, and the course of the disease, leaves very much to be desired, and a country practitioner who is forced to treat these diseases himself will not be greatly benefited by its perusal.

At the end of the work the author has added an appendix, consisting of the doses of the different remedies for children and a number of formulas, which he has found of the greatest service in his private and dispensary practice. This appendix will be found especially fitted to the wants of the young practitioner.

On the whole, the book is one which will find many friends, and of which the author may well be proud.

LOUIS HEITZMANN.

DE L'ÉLECTRICITÉ COMME AGENT THÉRAPEUTIQUE EN GYNÉCOLOGIE.—ELECTRICITY AS A THERAPEUTICAL AGENT IN GYNECOLOGY. By PAUL F. MUNDÉ, M.D., Professor of Gynecology at the New York Polyclinic, etc., etc. Translated and annotated by DR. P. MÉNIÈRE, Professor of Gynecology, etc., etc. Paris: Octave Doin, 1887. pp. 72, figs. 12.

This well-known monograph calls for no introduction to the readers of this JOURNAL. It has unquestionably done much to popularize the application of electricity in gynecology in this country, and the translator offers it to his compatriots as not only filling a void in French medical literature, but also because, from his personal experience, he is satisfied that the teaching and the deductions are sound. The notes of the translator are of a

practical nature, and often amplifications of points made in the text.

Since the publication of the article in the December, 1885, number of this JOURNAL, the author has cured two cases of subperitoneal fibroid by puncture electrolysis per vaginam, using from one hundred and seventy to two hundred milliampères, in one case one sitting, in the second case three sittings. Within six months the large tumors (filling the whole pelvis and more) had almost entirely disappeared. Dr. Mundé always uses the milliampèremetre when giving galvanism, but grades the strength of the current by the sensations of the patient.

An application to translate this monograph into the Russian language has just been received and granted. E. H. G.

DISEASES AND NEW-GROWTHS OF THE OVARIES. By H. C. COE, M.D. ("Reference Handbook of the Medical Sciences.") New York: Wm. Wood & Co., 1887.

In this article we find a complete, although necessarily condensed account of the diseases and new-growths of the ovaries. The subject of the treatment of ovarian disease is well and forcibly presented from a very conservative standpoint, the writer claiming, and we think very justly, that in the present day there is too strong a tendency to thrust aside the palliative treatment of, for instance, chronic oöphoritis in favor of the popular substitute, laparotomy. The article being addressed mainly to the general practitioner, these and other moderate views cannot fail to have a healthy effect in inculcating proper conservatism, particularly when they emanate from a worker who has had considerable opportunity to study his subject, not alone from a purely clinical, but also from its pathological side. The portion of the article devoted to new-growths tersely represents the present state of our knowledge, and the contribution may be read to advantage by all who have neither the time nor opportunity to seek for solution of disputed points in the systematic treatises. E. H. G.

ABSTRACT.

1. A. Martin: Diseases of the Tubes (*Ztschrft. f. Geb. u. Gyn.*, XIII., 2).—In this exceedingly valuable article, the inflammatory affections of the Fallopian tubes are considered in regard to frequency, etiology, symptomatology, and therapeutics. The data are based on 287 instances observed during five years, and we reproduce here the main deductions, which are drawn from a careful study of the cases. Diseases of the tubes are relatively frequent compared with other affections of the genital organs. Winckel, in examining 500 cases post mortem, found the tubes diseased in 300, and of 1,000 not selected cases seen in dispensary practice, M. recorded 63 as suffering from tubal affections; the disparity in these figures being due to the fact that M. only includes the instances where *intra vitam* the disease of these organs was the

preponderating element. Of the 287 cases, 9 only were under 20 years of age, 16 were between 40 to 50, the large majority belonging to the period of greatest sexual activity. 220 were married, 61 had aborted a number of times and 27 only once. Almost without exception disease of other organs accompanied that of the tubes, such as inflammatory affections of the uterine mucous membrane, remnants of pelvic peritonitis, thickenings, adhesions around the uterus, inflammations of the ovaries, etc. In 70 cases where the trouble dated from confinement, the uterus was greatly subinvolved. In 70 instances, there were present as complications ovarian cysts, in 4 myomata, in 3 malignant degeneration of the endometrium.

From an etiological standpoint, in none of the instances of salpingitis could the affection be deemed as primary in the tubes, but it could be obviously traced by extension from other organs. In 147 cases, the etiological cause lay in chronic or acute inflammatory processes in the endometrium: 70 times it could be traced to puerperal processes, in which the premature interruption of pregnancy played an important rôle. 55 of the women were suffering from gonorrhea; 3 showed evidence of recent syphilis coincidently with the development of the tubal affection. 10 of the women were tubercular, and in the absence of other causal factor, the affection was considered tubercular in nature. In 122 instances, there were present changes in the pelvic peritoneum, in and around the ovaries, in the broad ligaments. In not a single case could the extension of the process be traced from the peritoneum, whilst in 11 cases extension from the tube to its surroundings could be proved, in 2 instances as the result of rupture, in the others from dripping of the various fluids out of the ostium abdominale. In 91 instances, both tubes were diseased; in 58 the right and in 138 the left alone, or greatly so. In a trifle more than one-fourth of the cases of extension from the endometrium, the affection was bilateral, and the same held true for one-fourth of the cases of puerperal origin, one-half of the gonorrhoeic, and two-fifths of the tubercular.

After entering into the pathology of diseases of the tubes, M. passes to the symptomatology and states that there is as yet no known symptom which is characteristic of disease of the tubes. The majority of the patients complained of dull, rather intense, intermittent pain in the lateral regions of the pelvis, assuming frequently a colicky nature. In only two instances was there a history of colic-like pains relieved on the passage of the fluid from the tube into the uterus. A very valuable index of salpingitis is the great physical general depression of the patient. Their appearance suggests the existence of some serious affection.

During the existence of salpingitis, even when unilateral, the patients are ordinarily sterile. If cure of the disease is effected, however, the patients may conceive, as M. noted in four of his cases. The morbid process in the majority of the simple cases tends towards cure. The prognosis is by no means so favorable in cases where the affection depends on the presence of micro-organisms. In these instances, rupture or infection of the neighboring organs is usual, and the patients can only be cured by removing the diseased organs.

The diagnosis of diseases of the tubes can only be reached by palpation. The tubes are felt as more or less sensitive cords, thickened, and

extending from the cornua of the uterus, and where the abdominal walls are not tense these organs may be palpated without recourse to anesthesia, from the uterus to their extremity. Often the tube may be differentiated apart from the ovary; but where these organs and the uterus are matted together in the midst of adhesions, then the differential diagnosis of distention of the tube is a matter of great difficulty, although generally palpation near the uterine insertion of the organ is of great assistance.

That a medical, antiphlogistic treatment is of some avail is proved amply by the fact that in over four-fifths of M.'s cases extirpation was not necessary. Local venesection over the abdomen and the uterus, rest in bed, cleansing of the bowels, narcotics during the attacks of pain—such are the chief means at our disposal, in addition to measures which aim at causing absorption. In cases of gonorrheal origin, M. has frequently obtained good results from the use of the unguent. hydrarg. cinerei. Only after protracted use of such measures did he resort to extirpation, and this in 72 cases—in 30 removal of both tubes, in 42 of one, and in 4 first one and later the other. Of these cases, 12 died. The escape of the fluid, whether serum or pus, into the peritoneal cavity during the operation is not considered by M. a special *contretemp*. In a number of instances, this happened, and yet the patients recovered well, although he did not waste much time in the endeavor to thoroughly cleanse the peritoneal cavity. He always aims, however, at protecting the peritoneal cavity, and he aspirates the tube before attempting removal. As a rule, even if he is obliged to leave in a remnant of a tube, he closes completely the abdominal cavity. Only exceptionally does he resort to drainage, and then often by means of a thick drain tube passed into the vagina.

E. H. G.

INDEX TO VOLUME XX.

A.

	PAGE
Abdominal cavity, syringe for washing out. Hanks.....	295
muscles, diastasis of the, during the puerperium. Pro-	
chownick.....	222
palpation in obstetrical diagnosis, the importance of.	
Hoag.....	1208
pregnancy, an erroneous diagnosis in a case of. Currier,	1233
section for intestinal perforation. Haynes.....	753
section for removal of the fetus. Wathen.....	1074
section, some peculiar cases of. Gordon.....	1269
sections. Price.....	749
walls during pregnancy, the distention of the. Schlee.....	1228
walls, hard-rubber plates for protection of. Sims.....	420
Abscess of both ovaries. Price.....	1196
ovarian, and pyo-salpinx. Imlach.....	105
pelvic, case of, complicated with fibro-cyst of the uterus;	
explorative laparotomy. Wylie.....	165
Absence of the vagina, congenital, with menstrual retention, and	
the history of a case after operation. Emmet.....	1189
Aborted ovum, specimen of. Nilsen.....	172
Abortion, incomplete, in twin pregnancy, a case of; one fetus lost at	
third month, but its placenta retained to delivery at	
term of the other twin. Warren.....	507
incomplete, of twin pregnancy. Reichard.....	844
tetanus following. Smith.....	337
Address, annual, Obstetrical and Gynecological Society of Washing-	
ton. King.....	187
annual, Obstetrical Society of London. Potter.....	446
of the retiring president, Gynecological Society of Chicago.	
Nelson.....	81
President's, of the obstetric section, International Medical	
Congress. Miller.....	1066
the president's annual, American Gynecological Society.	
Skene.....	1052
Adenoma, suppurating ovarian, with uterus; autopsy. Byford....	311
Adhesions, intra-peritoneal, remarks on, elicited by Dr. R. Battey's	
criticism on an article, etc. Hadra.....	957
old intra-pelvic, can they be stretched by continuous	
pressure, applied through the vaginal fornix?	
Coe.....	60, 169
pelvic, the vaginal tampon in. Coe.....	516
pelvic, the vaginal tampon in. Tucker.....	288

	PAGE
After-coming head, a study of Deventer's method of delivery of the.	
Bartlett.....	1082
head in cases of pelvic deformity, the manual delivery	
of the. Martin.....	447
Air, utilization of the outgoing, in the replacement of the uterus by	
the knee-chest position. Mosher.....	1028
Alexander's operation. Doleris.....	1051
operation, see also Round ligaments.	
Alsdorf. Peritonitis as a metastasis of acute articular rheumatism	
during the puerperal state.....	1032
Amputation, supra-vaginal, of the pregnant uterus complicating a	
multilocular fibroid tumor, a case of. Etheridge..	69
supra-vaginal, of the uterus, the technique of. Hacker.	108
supra-vaginal, suspension of the pedicle after. Woelf-	
ler.....	108
Anemia, post-menstrual, on the excess of male children when con-	
ception occurs at the time of the. Fürst....	559
Aneurism-needle, modified. Hunter.....	519
with movable joint for use in vaginal hysterec-	
tomy. Polk ..	294
Anteflexion, acquired, associated with disease of the ovaries, the	
treatment of, with reference to the question of sterility. Coe....	623
Antiseptic pad, the. Hirst.....	747
Antiseptics in private obstetric practice, the importance of. Parvin.	1063
Apostoli. Some new uses of the galvanic current in gynecology....	1059
The treatment of chronic metritis and chronic endome-	
tritis by intrauterine electrolysis.....	111
Apostoli's method of electrolysis. Martin.....	881
Appendages, uterine, see Uterine.	
Arm and hand, prenatal deformity of. Grandin.....	425
Aust-Lawrence. Should a woman suffering from fibroid tumor be	
allowed to marry?	1106
Auvard. Obstetrics and gynecology in France, report on.....	724
B.	
Bacteriological examination of an extrauterine fetus, and theoret-	
ical considerations of the bacteriological condition and fate of	
dead, retained fetuses. Holmes.....	992
Baldy. Emmet's new operation for prolapse of the posterior vaginal	
wall, or so-called laceration of the perineum.....	430
Pyo-salpinx in its relation to puerperal fever	867
Salines in peritonitis following abdominal section.....	1297
Bandage, Tait's abdominal, for use after laparotomy. Wylie....	418
Bandl, Ludwig. In memoriam. Grandin	46
Bantock. Remarks on the removal of uterine fibroids by abdominal	
section.....	1286
The treatment of the pedicle in supra-vaginal hysterec-	
tomy.....	1055
Barrenness, the causes and treatment of. Madden.....	1094
Bartlett. A case of obstetrics, with remarks	539
A study of Deventer's method of delivery of the after-	
coming head	1082
Several items of obstetrical interest	979
Batley. Batley's operation and its natural results.....	1061
Betts. A case of tubercular infection in a child.....	589
Bigelow. The treatment of pain and insomnia arising from gynecol-	
ogical causes.....	707
Uterine dyspepsia	824
Bladder, ulcers of the. Schatz.....	895

	PAGE
Bozeman. Artificial and combined drainage of the bladder, kidneys, and uterus, through the vagina, with and without graduated pressure	1091
Braun. On reflex gastric neuroses due to uterine disease.....	223
Statistics of the first Vienna obstetrical clinic, in connection with antiseptis, during twenty-nine years.....	223
Thirty-eight hysteromyotomies with extra-peritoneal treatment of the pedicle	1228
Breast, tumors of the, treated by electrolysis. Garrett.....	1104
Breus' forceps. Dickinson.....	405
forceps. Fry.....	616
modification of the obstetric forceps. Fry.....	251
Briggs. Uterine calculus.....	103
Broad ligament, fibroid tumor of the. Goodell.....	178
Budin. Incomplete transverse septum of the cervix.....	1228
The treatment of retained placenta after miscarriage	895
Bumm. Mixed gonorrheal infection in the female.....	1300
The etiology of puerperal mastitis.....	112
Burmese, midwifery among. Pedley.....	442
Burten. Removal of the tubes and ovaries.....	1093
Busey. Cystocolpocele complicating pregnancy and labor.....	1044
Some rare clinical observations in obstetric practice	920, 962
Butte and Doleris. Poisoning from the use of sublimate.....	335
Byford. Fibro-sarcoma of the left horn of the uterus, lungs, pleura, pericardium, rectum, transverse and descending colon, and abdominal parietes	312
Ovarian cyst in the broad ligament containing the degenerated ovary.....	810
Parovarian cyst and appendages, complicated by a uterine fibroid.....	310
Proliferating ovarian cystoma	309
Suppurating ovarian adenoma, with uterus; autopsy.....	311
The pelvic viscera of an infant three days old.....	877
The slippery-elm tent.....	642
Byrne. Pessary for procidentia uteri.....	857

C.

Calculus, uterine. Briggs.....	103
Calomel in certain diseases of children, note on the use of. Fowler, 1284	
Cameron. The influence of leukemia on pregnancy.	1070
Cancer, hepatic, secondary, a case of pregnancy complicated by. Phillips	1221
of the vaginal portion, the specimens from a case of hysterectomy for. Weston	1207
recent hysterectomies for. Post	1150
the vaginal total extirpation of the uterus for. Martin	1108
uterine, medical topical treatment of advanced. Cordes ..	1107
uterine, the modern treatment of. Jackson.....	1095
uterine, the treatment of, by hysterectomy. Koeberlé.....	107
Cancerous degeneration of the hyperplastic glands of the cervix uteri. Cushing.....	1099
uterus, total extirpation of the. Schultze.....	220
Carcinoma of the cervix in a maiden of nineteen, a case of. Eckardt. 1230	
of the cervix. the ultimate result of operation in case of. Hofmeier.....	1230
statistics of vaginal hysterectomy for. Martin	1228
Carpenter. A case of miscarriage with two distinct ova of different ages.....	200
Caruncle, urethral, of unusual size. Sims.....	638
Castration, a contribution to the subject of. Prochownick.....	783

	PAGE
Catgut, juniper: its use in gynecological operations. Martin.....	1009
Cattle-horn Cesarean section. Harris.....	1182
lacerations of the abdomen and uterus in pregnant women. Harris.....	673
lacerations of the pregnant uterus, an additional case of. Semeleder.....	1036
Cervix, cancerous degeneration of the hyperplastic glands of the.	
Cushing.....	1099
carcinoma of the, in a maiden of nineteen, a case of. Eckardt.	1230
carcinoma of the, the ultimate result of operation in case of. Hofmeier.....	1230
dystocia from rigidity of the, and its management. Jones.....	1090
incomplete transverse septum of the. Budin.....	1228
induration of the, due to laceration and attempt at repair. Is it better to restore or to amputate? Emmet.....	658
lacerated, Martin's operation for. Cushing.....	49
lacerated, the necessity for early operation upon the. Cleveland.....	523
lacerations of the, some points in the pathology and treatment of. Madden.....	1103
laceration of the, viewed obstetrically. Emerson.....	736
rapid dilatation of the. Wathen.....	1097
treatment and surgical restoration of the, during pregnancy. Doléris.....	1076
Cesarean operation, my work in reference to the. A word of protest in reply to Dr. Henry J. Garrigues. Saenger.....	593
operation, the. Saenger.....	1072
section, a case of. Cullingworth.....	1118
section, cattle-horn. Harris.....	1182
section, the prognosis of the. Lusk.....	1072
sections. Leopold, Skutsch, Credé, Freudenberg, Krukenberg.....	893
Chadwick. The operation for ventral hernia, after laparotomy....	1060
Chambers. Ecraseur.....	520
The surgical treatment of large uterine fibroids occupying the vagina.....	426
Champneys. Note on the relation between the implantation of the placenta and the insertion of the cord.....	1216
On the obstetrics of the kyphotic pelvis.....	97
The mechanism of the third stage of labor, 554, 660, 1119, 1214	
Charpentier. Experimental uremia.....	1071
The latest method of dilatation of the uterine cavity..	334
Chiara's clinic and the hospital St. Maria Nuova, Florence, Italy, observations in. Earle.....	984
Children, premature, some points in relation to. Taylor.....	1022, 1113
Christian. The proportion and causes of still-births.....	1084
Cleveland. Self-retaining Sims' speculum.....	854
Tenaculum.....	1280
The necessity for early operation upon the lacerated cervix.....	523
Coe. Can old intra-pelvic adhesions be stretched by continuous pressure, applied through the vaginal fornix?.....	60, 169
Case of sloughing wound of the labium, complicated with typhoid fever.....	167
Sarcoma of the ovary; ascites due to pressure on the vena cava inferior by a displaced kidney.....	173
Stem-pessary worn continuously for three months.....	50
The treatment of acquired antelexion associated with disease of the ovaries, with reference to the question of sterility..	623
The vaginal tampon in pelvic adhesions.....	516

	PAGE
Cohn. The primary and final results of prolapsus operations.....	1302
Collapse during laparotomy, irrigation of the abdominal cavity with hot water in cases of. Wylie.....	54
Conservative obstetrics; with special reference to the removal of the secundines after abortion, and to the treatment of the third stage of labor. Glisan.....	1080
Contracted pelvis, remarks on the treatment of labor in. Longaker.....	468, 529
Contraction, tonic uterine, without completeness of retraction. Duncan.....	1220
Contractions of the uterus, on the, throughout pregnancy, and their value in the diagnosis of pregnancy, etc. Hicks.....	1067
Cook. Is dentition a cause of disease?.....	580, 639
Copper wire, fine, suitable for plastic operations. Hunter.....	406
Cord, pulsating, case in which it could be felt through the abdominal wall. Nilsen.....	417
umbilical, absolutely short, measuring nine inches in length, placenta with marginal insertion of an. Jaggard.....	644
Cordes. Medical topical treatment of advanced uterine cancer....	1107
Cullingworth. A case of Cesarean section.....	1118
Currier. An erroneous diagnosis in a case of abdominal pregnancy.	1233
Cushing. Cancerous degeneration of the hyperplastic glands of the cervix uteri.....	1099
Martin's operation for lacerated cervix.....	49
Cushions, perineal and ovariectomy. Kelly.....	1029
Cutter. The galvanic treatment of uterine fibroids; full text of first fifty cases.....	113, 253, 376
Cutts. The value of the genu-pectoral position in difficult version.....	1173, 1204
Cyst, dermoid curious balls of sebaceous matter found in a. Mundé.....	621
dermoid, double, removed by laparotomy; recovery. Mundé.....	176
dermoid, of the ovary. Fenger.....	645
dermoid, of the ovary. Hunter.....	1275
dermoid, of the ovary. Jackson.....	645
of the anterior vaginal wall. McLean.....	415
ovarian, a large, cured by evacuation, drainage, and obliteration of its cavity. Parish.....	872
ovarian, and tube removed by laparotomy; unusual difficulty in penetrating the enveloping fold of peritoneum. Nilsen.....	1279
ovarian, in the broad ligament containing the degenerated ovary. Byford.....	310
ovarian, intra-ligamentous. Goodell.....	173
ovarian, simulating ectopic gestation. Packard.....	752
ovarian, unilocular, specimen of; laparotomy during an attack of peritonitis; recovery. Hanks.....	175
ovarian, with papillomatous degeneration of the internal surface. Dawson.....	734
parovarian. Kelly.....	179
parovarian, and appendages, complicated by a uterine fibroid. Byford.....	310
simple ovarian. Hunter.....	1283
unilocular, of the right ovary, the ovarian tissue showing corpus luteum of menstruation. Jaggard.....	312
Cystic degeneration of ovaries and double pyo-salpinx, specimen of. Lee.....	421
degeneration, ovary enlarged from. Wylie.....	421
ovary removed by laparotomy; recovery. Hanks.....	172
Cystitis in women. Sponton.....	1112
Cystocolpocele complicating pregnancy and labor. Busey.....	1044
Cystoma, ovarian, proliferating. Byford.....	309
ovarian, with twisted pedicle, a case of. Parkes.....	878

	PAGE
Cysts of the vagina, a contribution to the study of. With the report of a case. Johnston.....	1121, 1241
retro-peritoneal, the operative treatment of, in connection with Mikulicz's method of drainage. Fenger.....	763
tubo-ovarian. Griffith.....	1120
Czempin. The relation between the uterine mucous membrane and disease of the adnexa.....	1232
D.	
Da Costa. Rapid development of a fibro-sarcoma of the uterus.....	1196
Dakin. On mercurialism in lying-in women undergoing sublimate irrigation.....	210
Dawson. Laparotomy for fibro-cyst of the uterus.....	734
Ovarian cyst with papillomatous degeneration of the internal surface.....	734
Urinal for use in aggravated cases of vesico-vaginal fistula.....	50
Death from a rare cause after laparotomy. Hunter.....	1058
Death-rate, the, of lying-in hospitals in the United States. Hirst.....	531
Decidual endometrium, diffuse hyperplastic inflammation of the, a contribution to the study of. Hirst.....	1195, 1264
Deformity, prenatal, of arm and hand. Grandin.....	425
Dentition, is it a cause of disease? Cook.....	580, 639
Dermoid cyst, curious balls of sebaceous matter found in a. Mundé.....	621
cyst, double, removed by laparotomy; recovery. Mundé.....	176
cyst of the ovary. Fenger.....	645
cyst of the ovary. Hunter.....	1275
cyst of the ovary. Jackson.....	645
Descent and flexion in vertex presentations, a contribution to the mechanism of. Reynolds.....	369
Deventer's method of delivery of the after-coming head, a study of. Bartlett.....	1082
Diabetes insipidus in pregnancy and labor. Duncan.....	1214
Diastasis of the abdominal muscles during the puerperium. Prochownick.....	222
Dickinson. Breus' forceps.....	405
Dilatation, acute, of stomach following laparotomy. Helmuth.....	1183
of the uterine cavity, the latest method of. Charpentier.....	334
rapid, of the cervix uteri. Wathen.....	1097
Diphtheria, tracheotomy and intubation in. Montgomery.....	441
Displacements, uterine, a study of the causes and treatment of. Emmet.....	1040
Distention, the, of the abdominal walls during pregnancy. Schlee.....	1228
Dolérís. Alexander's operation.....	1051
Treatment and surgical restoration of the cervix during pregnancy.....	1076
Dolérís and Butte. Poisoning from the use of sublimate.....	335
Donaldson. A new retroversion stem pessary.....	845
Doran. Papilloma of the Fallopian tube and the relation of hydro-peritoneum to tubal disease.....	95
Drainage after laparotomy. Mundé.....	1048
artificial and combined, of the bladder, kidneys, and uterus, through the vagina, with and without graduated pressure. Bozeman.....	1091
Drainage-tubes, set of assorted. Wylie.....	50
Dropsy of the villi of the chorion. Zinke.....	779
Drugs during lactation, the administration of, and the effect of the milk on the nursing. Fehling.....	102
Dry treatment in gynecology. Practical details: the remedies: their use and application. Engelmann.....	561, 685

	PAGE
Duncan. On diabetes insipidus in pregnancy and labor .. .	1214
On hemorrhagic parametritis.....	1001
On tonic uterine contraction without completeness of re- traction.....	1220
Dunlap. The early history of ovariectomy in America.....	1106
Duplication of the genital organs, the bladder, and the urethra, labor in a case of. Engel.....	895
Dyspepsia, uterine. Bigelow.....	824
Dystocia from rigidity of the cervix and its management. Jones...	1090

E.

Earle. A study of certain questions in connection with puerperal fever, with particular reference to the use of the intra- uterine douche and curette.....	1077
Observations in Chiara's clinic and the hospital St. Maria Nuova, Florence, Italy.....	984
Observations in Vienna. The General Hospital, Billroth, Carl Braun, Bandl, and others.....	1213
One factor in the etiology, one means of cure in puerperal fever....	884
Eckardt. A case of carcinoma of the cervix in a maiden of nine- teen.....	1230
Eclampsia, puerperal, the treatment of. Jewett.....	1065
puerperal, treatment of. Oatman.....	1086
the renal troubles, and other pathological phenomena of pregnancy and labor, a new explanation of. King.....	225, 347
Ecraseur. Chambers.....	520
Editorial.....	560, 618, 729
Electricity, a method of treatment of fibroid tumors of the uterus by stronger currents of, based upon exact dosage. Martin.....	1102
extrauterine pregnancy and its treatment by. Van de Warker.....	1063
the value of, in certain of the diseases of women and in uterine inertia. Grandin.....	406
two cases of extrauterine pregnancy successfully treated by. Harrison.....	415
Electrolysis, Apostoli's method of. Martin.....	831
in the treatment of uterine fibroids. Freeman.....	290
tumors of the breast treated by. Garrett.....	1104
intrauterine, the treatment of chronic metritis and chronic endometritis by. Apostoli.....	111
Elliot. A case of chronic salpingitis; tubo-ovarian cyst, acutely in- flamed: hemorrhage into the cyst; operation; recovery	141
Emerson. Laceration of the cervix uteri viewed obstetrically.....	736
Emmet. A study of the causes and treatment of uterine displace- ments.....	1040
Congenital absence of the vagina, with menstrual re- tention and the history of a case after operation	1189
Induration of the cervix uteri due to laceration and at- tempt at repair. Is it better to restore or to ampu- tate?.....	858
Emmet's new operation for prolapse of the posterior vaginal wall, or so-called laceration of the perineum. Baldy.....	430
Endometritis, chronic hyperplastic. Heinrichius ..	559
chronic, pathology of. Meyer.....	1104
fungous, and tumors of the mucosa of the uterus, the differential diagnosis between. Heitzmann.....	897
Veit.....	1231

	PAGE
Endometrium, diffuse hyperplastic inflammation of the decidual, contribution to the study of. Hirst.....	1195, 1264
Engel. Labor in a case of duplication of the genital organs, the bladder, and the urethra.....	895
Engelmann. The dry treatment in gynecology. Practical details: the remedies; their use and application.....	561, 685
Enterocoele, vaginal, a case of anterior. Etheridge.....	314
Epithelioma of the vaginal fornix. Mundé.....	521
of the vulva. Janvrin.....	1276
vaginal hysterectomy for; recurrence and death in two months after the operation. Mundé.....	1186
Ergot, the treatment of uterine myoma by means of. Nelson.....	1112
Erich, Augustus F. In memoriam. Grandin.....	48
Etheridge. A case of anterior vaginal enterocoele.....	314
A case of supra-vaginal amputation of the pregnant uterus complicating a multilocular fibroid tumor.....	69
Antiseptic tamponnement of the vagina in the treatment of pelvic inflammations.....	543
Extrauterine fetus, the bacteriological examination of an, and theoretical considerations of the bacteriological condition and fate of dead, retained fetuses. Holmes.....	992
pregnancy, a case of. Greyor.....	818
pregnancy; and its treatment by electricity. Van de Warker.....	1063
pregnancy; death from internal hemorrhage, with partial rupture of the sac. Mundé.....	56
pregnancy; early diagnosis of. Tait.....	515
pregnancy; elimination of the fetus through the uterus. Schwarz.....	101
pregnancy successfully treated by electricity, two cases of. Harrison.....	415
pregnancy, the operation of primary laparotomy in cases of, with a tabular record showing the results in twenty-seven women, under twenty-six operators. Harris.....	1154
Extirpation of the uterus for cancer, the vaginal total. Martin.....	1108
Extirpations of the uterus, forty-eight total, for carcinoma, complete prolapse, and aggravated neuroses. Leopold.....	1229

F.

Fallopian tube. See Tube.	
Fehling. The administration of drugs during lactation, and the effect of the milk on the nursing.....	102
Fenger. Dermoid cyst of the ovary.....	645
The operative treatment of retro-peritoneal cysts in connection with Mikulicz's method of drainage.....	763
Feoktistow. The cause and purpose of menstruation.....	110
Fernald. Puerperal insanity.....	714, 754
Fever, puerperal, a study of certain questions in connection with, with particular reference to the use of the intrauterine douche and curette. Earle.....	1077
puerperal, and its treatment. Hong.....	828, 941
puerperal, on the relation of the atmosphere to. Kucher.....	1077
puerperal, one factor in the etiology, one means of cure in. Earle.....	884
puerperal, pyo-salpinx in its relation to. Baldy.....	867
puerperal, the prevention of. Sibbet.....	1078
typhoid, in a pregnant woman. Hirst.....	1296
typhoid, in the puerperal woman.....	1079

	PAGE
Fibroid, intrauterine, removed by vaginal enucleation from a virgin; recovery. Mundé.....	55
tumor of the broad ligament. Goodell.....	178
tumor, should a woman suffering from, be allowed to mar- ry? Aust-Lawrence	1106
tumors of the uterus, a method of treatment of, by stronger currents of electricity based upon exact dosage. Martin.....	1102
uterine, weighing two and a half pounds, case of spontaneous expulsion of a. Johnston	961
Fibroids, hysterectomy for. Freeman.....	851
successful removal of the uterus for. Parkes	75
uterine, electrolysis in the treatment of. Freeman.....	290
uterine, occupying the vagina, the surgical treatment of large. Chambers.....	426
uterine, remarks on the removal of, by abdominal section. Bantock.....	1286
uterine, the galvanic treatment of; full text of first fifty cases. Cutter.....	113, 253, 376
Fibro-cyst, interstitial, of the uterus; laparotomy. Harsha.....	32
of the uterus, laparotomy for. Dawson.....	734
Fibro-myoma of the uterus, a case of removal of the ovaries and tubes for. Jackson.....	762
Fibro-sarcoma of the left horn of the uterus, lungs, pleura, pericar- dium, rectum, transverse and descending colon, and abdominal parietes. Byford.....	312
of the uterus, rapid development of a. DaCosta.....	1196
Fibrous tumor of the uterus, hysterectomy for; death from septi- cemia. Hanks	1184
Fistula, vesico-vaginal, urinal for use in aggravated cases of. Daw- son.....	50
Fistulæ, urinary, the histories of thirty-five operations for, per- formed from 1885 to 1886 at the Breslau clinic. Hoehlmann.....	224
Flexion and descent in vertex presentations, a contribution to the mechanism of. Reynolds.....	369
Flexures, the intrauterine stem in the treatment of. Jackson.....	1058
Forceps, Breus'. Dickinson.....	405
Breus'. Fry.....	616
intravaginal rotation of curved. Green	728
obstetric, Breus' modification of the. Fry.....	251
the normal, the mechanism of labor and. Lazarewitch.....	1070
with parallel branches, improved. Stewart	1070
Foster. Vaginal injections in Sims' posture	1064
Fowler. Cases of melena neonatorum.....	176
Note on the use of calomel in certain diseases of children.....	1284
True hermaphroditism.....	423
France, obstetrics and gynecology in, report on. Auvard	724
Frank. Prolapsus operations.....	1303
Freeman. Electrolysis in the treatment of uterine fibroids.....	290
Hysterectomy for fibroids	851
Fritsch. Sixty vaginal hysterectomies.....	1108
The use of iodoform gauze in gynecology.....	781
Fruitnight. Removal of imprisoned hairpin from the pregnant ute- rus, introduced by the patient to procure abortion.....	587
Fry. Breus' forceps.....	616
Breus' modification of the obstetric forceps.....	251
Fürst. On the excess of male children when conception occurs at the time of the post-menstrual anemia.....	559

G.

Galactorrhea, rare case of. Wylie.....	638
unilateral, a case of. Gibbons	445, 552
Galvanic current in gynecology, some new uses of the. Apostoli	1059
Gangrenous stomatitis, complicating catarrhal pneumonia, case of. Murray	166
Garrett. Tumors of the breast treated by electrolysis.....	1104
Garrigues. The antiseptic pads of Dr. H. J. Garrigues and Dr. Wm. L. Richardson.....	644
Genu-pectoral position in difficult version, the value of. Cutts.....	1173, 1204
Gibbons. A case of unilateral galactorrhea.....	445, 552
Glisan. Conservative obstetrics; with special reference to the removal of the secundines after abortion, and to the treatment of the third stage of labor.....	1080
Glycerin tampon, the, as a therapeutic agent in gynecology. Huell- man.....	336
Gonorrheal infection, mixed, in the female. Bumm.....	1300
Goodell. A year's work in ovariectomy.....	298
Dr. William Goodell's statistics in ovariectomy.....	48
Fibroid tumor of the broad ligament.....	178
Intra-ligamentous ovarian cyst.....	178
Gordon. Some peculiar cases of abdominal section.....	1269
Grandin. In memoriam Augustus F. Ehrich.....	48
In memoriam Ludwig Bandl.....	46
Prenatal deformity of arm and hand.....	425
Self-retaining tenaculum.....	420
The value of electricity in certain of the diseases of wo- men and in uterine inertia.....	406
Grant. Pelvic hematocele.....	104
Green. Intra-vaginal rotation of curved forceps.....	728
Greyer. A case of extrauterine pregnancy.....	818
Griffith. Tubo-ovarian cysts.....	1120
Gynecology, the dry treatment in. Practical details: the remedies; their use and application. Engelmann	561, 685

H.

Hacker. The technique of supra-vaginal amputation of the uterus..	108
Hadra. Remarks on intra-peritoneal adhesions, elicited by Dr. R. Battey's criticism on an article, etc	957
Hagner. Case of alarming secondary hemorrhage twenty-one days after delivery.....	305
Hairpin, removal of imprisoned, from the pregnant uterus, intro- duced by the patient to procure abortion. Fruitnight.....	587
Hamill. Placenta previa centralis.....	1194
Hanks. Combined tenaculum and counter-pressure hook.....	171
Cystic ovary removed by laparotomy; recovery.....	172
Hysterectomy for fibrous tumor of the uterus; death from septicemia.....	1184
Specimen of unilocular ovarian cyst; laparotomy during an attack of peritonitis; recovery.....	175
Syringe for washing out abdominal cavity.....	295
Tenaculum with steel shank, so constructed as to indicate the direction of the point.....	171
Harris. A tenth horn-Cesarean case, with recovery of the woman; the subject being a Pawnee Indian squaw, etc.	1033
Cattle-horn Cesarean section	1182
Cattle-horn lacerations of the abdomen and uterus in preg- nant women	673

	PAGE
Harris. The operation of primary laparotomy in cases of extra-uterine pregnancy, with a tabular record showing the results in twenty-seven women, under twenty-six operators	1154
Harrison. Two cases of extrauterine pregnancy successfully treated by electricity	415
Harsha. Interstitial fibro-cyst of the uterus: laparotomy.....	32
Hausen. The puerperal involution of the uterus.....	1238
Haynes. Abdominal section for intestinal perforation.....	753
Head, after-coming, the manual delivery of the, in cases of pelvic deformity. Martin.....	447
Heads, large hard, labor complicated by. Price.....	748
Heinricius. On chronic hyperplastic endometritis.	559
Heitzmann. The differential diagnosis between fungous endometritis and tumors of the mucosa of the uterus.....	897
Helmuth. Acute dilatation of stomach following laparotomy.....	1183
Hematocele, pelvic. Grant.....	104
successfully treated by operation, a case of. Phillips.....	1222
Hemato-salpinx; laparotomy; recovery. Mundé.....	59
Hemorrhage, internal uterine, the result of over-distention of the uterus from hydramnios. Trenholme.....	1081
post-partum, management of pregnancy, with reference to the prevention of. Sale.....	1089
secondary, following removal of the uterine appendages; recovery after transfusion of salt solution. Lee	1277
secondary, twenty-one days after delivery, case of alarming. Hagner.....	305
Hemorrhagic conditions of the uterus, the therapeutic value of some medicines in the treatment of. Palmer.....	1050
parametritis. Duncan.....	1001
Herman. A case of lupous stricture and atresia of the female urethra	98
On stricture of the female urethra	444
Hermaphroditism, true. Fowler	423
Hernia, ventral, after laparotomy, the operation for. Chadwick.....	1060
ventral, caused by laparotomy. Wylie.....	25, 52
Hewitt. The relations between changes in the tissues and changes in the shape of the uterus.....	1096
Hicks. On the contractions of the uterus throughout pregnancy, and their value in the diagnosis of pregnancy, etc.	1067
Hirst. A contribution to the study of diffuse hyperplastic inflammation of the decidua endometrium.....	1195, 1264
Acute pneumonia in utero.....	1195
Ectro-melic monster.....	1196
Late infection in the puerperal state.....	745
The antiseptic pad	747
The death-rate of lying-in hospitals in the United States ...	531
Typhoid fever in a pregnant woman.....	1296
Virulent puerperal sepsis.....	871
Hoag. Puerperal fever and its treatment	828, 941
The importance of abdominal palpation in obstetrical diagnosis.....	1208
Hoehlmann. The histories of thirty-five operations for urinary fistulæ performed from 1835 to 1886 at the Breslau clinic.....	294
Hofheimer. Expulsion of an ovum at term with membranes intact.....	1181
Hofmeier. The ultimate result of operation in case of carcinoma of the cervix	1230
Holmes. The bacteriological examination of an extrauterine fetus, and theoretical considerations of the bacteriological condition and fate of dead, retained fetuses.....	992

	PAGE
Horn-Cesarean case, a tenth, with recovery of the woman; the subject being a Pawnee Indian squaw, etc. Harris	1033
Hot water in cases of collapse during laparotomy, irrigation of the abdominal cavity with. Wylie.....	54
Huellman. The glycerin tampon as a therapeutic agent in gynecology	336
Hunter. Apparatus for squeezing out sponges.....	1280
Death from a rare cause after laparotomy.....	1058
Dermoid cyst of the ovary.....	1275
Fine copper wire suitable for plastic operations.....	406
Modified aneurism-needle.....	519
Simple ovarian cyst.....	1283
Hydramnios, a contribution to the history of. Wilson.....	1
internal uterine hemorrhage the result of over-dilatation of the uterus from. Trenholme	1081
Hydro-salpinx. Kelly.....	304
Hyperplastic endometritis, chronic. Heinrichs.....	559
inflammation of the decidual endometrium, contribution to the study of diffuse. Hirst.....	1195, 1264
Hysterectomies for cancer, recent. Post.....	1150
sixty vaginal. Fritsch.....	1008
Hysterectomy for cancer of the vaginal portion, the specimens from a case of. Weston.....	1207
for fibroids. Freeman.....	851
for fibrous tumor of the uterus; death from septicemia. Hanks	1184
for myoma. Price.....	184
for soft myo-fibroma; recovery. Parkes.....	879
supravaginal, the treatment of the pedicle in. Bantock.....	1055
the treatment of the uterine cancer by. Koeberlé ..	107
vaginal, aneurism-needle with movable joint for use in. Polk	294
vaginal, for carcinoma, statistics of. Martin.....	1228
vaginal, for epithelioma; recurrence and death in two months after the operation. Mundé.....	1186
vaginal, remarks on the technique of. Martin	1145
vaginal, two cases of successful, with specimens. Mundé.....	520
Hysteromania, oöphorectomy for. Lee.....	732
Hysteromyotomies, thirty-eight, with extra-peritoneal treatment of the pedicle. Braun	1238
Hysterorrhaphy. Kelly	33, 67

I.

Imlach. Ovarian abscess and pyo-salpinx.....	105
Implantation of the placenta and the insertion of the cord, note on the relation between the. Champneys.....	1216
Induration of the cervix uteri due to laceration and attempt at repair. Is it better to restore or to amputate? Emmet	858
Inertia, uterine, the value of electricity in certain of the diseases of women and in. Grandin.....	406
Infection, late, in the puerperal state. Hirst.....	745
Injections, vaginal, in Sims' posture. Foster	1064
Insanity, puerperal. Fernald.....	714, 754
Insomnia and pain arising from gynecological causes, the treatment of. Bigelow.....	707

	PAGE
Interstitial pregnancy, a case of, with removal of the product of conception through the uterine cavity. Parkes	536
Intestinal perforation, abdominal section for. Haynes	753
Intestine, specimen of, showing healing process after injury. Sims.	290
Intestines, adherent, from peritonitis, simulating fibroid tumor. Price	1290
Intra-abdominal operations, report of thirty-one cases of. Price . . .	180
Intra-pelvic adhesions, old, can they be stretched by continuous pressure, applied through the vaginal fornix? Coe	50, 169
Intra-peritoneal adhesions, remarks on, elicited by Dr. R. Battey's remarks on an article. etc. Hadra	957
Intrauterine fibroid removed by vaginal enucleation from a virgin; recovery. Mundé	55
medication. Wilson	286
Intubation and tracheotomy in diphtheria. Montgomery	441
Inversion of the uterus, a case of chronic, of twenty-one months' standing reduced by colpoecyrtosis. Jaggard	130, 205
of the uterus without constitutional symptoms, a case of. Reeve	140
Involution of the uterus, the puerperal. Hausen	1228
Iodoform gauze in gynecology, the use of. Fritsch	781
Irrigation of the abdominal cavity with hot water in cases of col- lapse during laparotomy. Wylie	54
Items	224, 336, 448, 672, 784, 896
of obstetrical interest, several. Bartlett	979

J.

Jackson.	A case of removal of the ovaries and tubes for fibromyoma of the uterus.....	762
	Dermoid cyst of the ovary.....	645
	The intrauterine stem in the treatment of flexures.....	1058
	The modern treatment of uterine cancer.....	1095
	Vaginal pressure in the treatment of chronic pelvic disease.....	649
Jaggard.	A case of chronic inversion of the uterus of twenty-one months' standing reduced by colpeuryxis.	130, 205
	A placenta showing velamentous insertion of the umbilical cord, and remains of an extensive hemorrhage into the parenchyma of the organ.....	313
	An intact ovum, corresponding to the fifth month of pregnancy.....	1207
	Placenta with marginal insertion of an absolutely short umbilical cord, measuring nine inches in length....	644
	Puerperal uterus, showing endometritis puerperalis.....	761
	Unilocular cyst of the right ovary, the ovarian tissue showing corpus luteum of menstruation.....	312
Janvrin.	Epithelioma of the vulva.....	1276
Jewett.	The treatment of puerperal eclampsia.....	1065
Johnston.	A contribution to the study of cysts of the vagina. With the report of a case.....	1121, 1241
	Case of spontaneous expulsion of a uterine fibroid weighing two and a half pounds.....	961
Johnstone.	The infantile uterus.....	1063
Jones.	A new adjustable speculum and retractor.....	549
	Dystocia from rigidity of the cervix and its management....	1090
	Uterus bicornalis.....	660
Juniper catgut:	its use in gynecological operations. Martin.....	1009

K.

	PAGE
Kammerer. In memoriam Karl Schroeder.....	281
Kelly. An ovarian pregnancy.....	66
Hydro-salpinx.....	304
Hysterorrhaphy.....	83, 67
Lithiasis in pregnancy.....	1083
Notes on palpation of the female ureters.....	187
Palpation and sounding of the female ureters.....	1294
Parovarian cyst.....	179
Pelvic measurements.....	440
Perineal and ovariectomy cushions.....	1029
Placenta previa.....	436
Placenta previa centralis.....	438
Removal of ovaries and tubes for subinvolution and chronic metritis.....	180
Sarcoma.....	65
Kidney, tumor of the. McLean.....	1380
King. A new explanation of the renal troubles, eclampsia, and other pathological phenomena of pregnancy and labor.....	225, 347
Annual address, Obstetrical and Gynecological Society of Washington.....	187
Can we influence the mechanism of labor by external pres- sure over the sacro-sciatic foramen?.....	513
Kinloch. Two laparotomies on same patient. Removal of both ovaries for cystic disease, and also a large tumor of the mesen- tery. Silk ligature passes into the bladder, and serves as the nucleus of a calculus.....	721
Koeberlé. The treatment of uterine cancer by hysterectomy.....	107
Krukenberg. The cause of placenta marginata.....	222
Kucher. On the relation of the atmosphere to puerperal fever. .	1077
Kyphotic pelvis, on the obstetrics of the. Champneys.....	97

L.

Labium, sloughing wound of the, complicated with typhoid fever, case of. Coe.....	167
Labor, can we influence the mechanism of, by external pressure over the sacro-sciatic foramen? King.....	513
complicated by large, hard heads. Price.....	748
in a case of duplication of the genital organs, the bladder, and the urethra. Engel.....	895
in contracted pelvis, remarks on the treatment of. Long- aker.....	468, 529
the mechanism of, and the normal forceps. Lazarewitch.....	1070
the mechanism of the third stage of. Champneys. 554, 660, 1119, 1214	49
Lacerated cervix, Martin's operation for. Cushing.....	49
cervix, the necessity for early operation upon the. Cleve- land.....	523
Laceration of the cervix uteri viewed obstetrically. Emerson.....	736
of the perineum, see Prolapse.	
Lacerations, cattle-horn, of the abdomen and uterus in pregnant women. Harris.....	673
of the cervix uteri, some points in the pathology and treatment of. Madden.....	1103
Lactation, defective, and the remedy for it. Mensinga.....	1306
the administration of drugs during, and the effect of the milk on the nursing. Fehling.....	102

	PAGE
Lane. What are the chief factors which determine the differences which exist in the form of the male and female pelves?.....	1217
Laparo-salpingotomy successfully performed in Russia in 1784. Schlesinger	669
Laparotomies, two, on same patient. Removal of both ovaries for cystic disease, and also a large tumor of the mesentery. Silk ligature passes into the bladder and serves as the nucleus of a calculus. Kinloch.....	721
Laparotomy as a cure for tuberculosis of the peritoneum. Van de Warker	932
death from a rare cause after. Hunter.....	1058
drainage after. Mundé.....	1048
for adherent retroflexed or retroverted uterus. Polk..	630
ventral hernia caused by. Wylie.....	25, 52
Lazarewitch. The mechanism of labor and the normal forceps....	1070
Lee. Oöphorectomy for hystero-mania	732
Secondary hemorrhage following removal of the uterine appendages; recovery after transfusion of salt solution.....	1277
Specimen of cystic degeneration of ovaries and double pyo-salpinx	421
Leopold. Forty-eight total extirpations of the uterus for carcinoma, complete prolapse, and aggravated neuroses	1229
The frequency of malignant growths of the ovary and their surgical treatment	1227
Leopold, Skutsch, Credé, Freudenberg, Krukenberg. Cesarean sections.....	893
Leukemia, the influence of, on pregnancy. Cameron....	1070
Lewers. On the frequency of pathological conditions of the Fallopian tubes, as determined by observations in the post-mortem room of the London Hospital.....	1002
Lip, posterior, of the vaginal portion. Weston.....	1208
Lithiasis in pregnancy. Kelly.....	1083
Longaker. Laparotomy for pyo-salpingitis.....	186
Remarks on the treatment of labor in contracted pelvis.....	468, 529
Lupus or esthiomène, a contribution to the study of ulcerative lesion of the vulva, commonly called. Peckham	785
stricture and atresia of the female urethra, a case of. Herman	98
Lusk. The prognosis of the Cesarean section.....	1072
Lying-in hospitals in the United States, the death rate of. Hirst	531

M.

MacCallum. Vicarious menstruation	1068
Madden. On the prevention and treatment of puerperal septicemia.....	1077
Some points in the pathology and treatment of lacerations of the cervix uteri.....	1103
The causes and treatment of barrenness.....	1094
Male children, on the excess of, when conception occurs at the time of the post-menstrual anemia. Fürst.....	559
Malignant growths of the ovary, the frequency of, and their surgical treatment. Leopold.....	1227
Mann. Removal of solid uterine and ovarian tumors by laparotomy, with a report of nine cases.....	449
Marcy. Histology and pathology of reproduction	1088
The histological and surgical treatment of uterine myomata.....	1112
Martin. A method of treatment of fibroid tumors of the uterus by	

	PAGE
stronger currents of electricity based upon exact dosage.....	1102
Martin, Apostoli's method of electrolysis.....	881
Diseases of the tubes.....	1310
Juniper catgut: its use in gynecological operations.....	1009
Remarks on the technique of vaginal hysterectomy.....	1145
Statistics of vaginal hysterectomy for carcinoma.....	1228
The manual delivery of the after-coming head in cases of pelvic deformity.....	447
The vaginal total extirpation of the uterus for cancer.....	1108
Martin's operation for lacerated cervix. Cushing.....	49
Mastitis, puerperal, the etiology of. Bumm.....	112
McArdle. Primary perineorrhaphy.....	1168, 1197
McLaury. Remarks on the relation of menstruation to the sexual functions.....	158
McLean. Cyst of the anterior vaginal wall.....	415
Pessary for urethrocele.....	518
Tumor of the kidney.....	1280
Meadows, Alfred, M.D., obituary.....	850
Measurement, pelvic. Kelly.....	440
Meinert. Tetanus in pregnancy.....	1230
Melena neonatorum, cases of. Fowler.....	176
Membranes intact, expulsion of an ovum at term with. Hofheimer.....	1181
Mensinga. Defective lactation and the remedy for it.....	1306
Menstruation, the cause and purpose of. Feoktistow.....	110
the relation of, to the sexual functions, remarks on, McLaury.....	158
vicarious. MacCallum.....	1068
vicarious, cases of. Wright.....	88
Mercurialism in lying-in women undergoing sublimate irrigation. Dakin.....	210
Metritis, chronic, and chronic endometritis, the treatment of, by intrauterine electrolysis. Apostoli.....	111
chronic, and its treatment. Mitchell.....	969
Meyer. Contributions to the pathology of chronic inflammation of the lining membrane of the uterus.....	1104
Midwifery among the Burmese. Pedley.....	442
and the education of midwives, a plea for the teaching of practical. Zinke.....	656
Miles. A record of the presentation in seventy-five cases of parturition with remarks on occipito-posterior deliveries.....	770
Miller. President's address. Obstetric Section, International Medical Congress.....	1066
Retroversio-flexion, and a new instrument for reposition of the uterus.....	146
Miscarriage with two distinct ova of different ages, a case of. Carpenter.....	200
Mitchell. "Chronic metritis" and its treatment.....	969
Monster, ectro-melic. Hirst.....	1196
Montgomery. Tracheotomy and intubation in diphtheria.....	441
Morrill. Case of placenta previa totalis; general adhesion of the placenta; recovery after profuse hemorrhage.....	619
Mosher. Utilization of the outgoing air in the replacement of the uterus by the knee-chest position.....	1028
Mundé. Case of pregnancy in one horn of double uterus, with successive miscarriages.....	168
Curious balls of sebaceous matter found in a dermoid cyst.....	621
Double dermoid cyst removed by laparotomy; recovery... ..	176
Double pyo-salpinx, with abscess of one ovary; laparotomy; recovery.....	58
Drainage after laparotomy.....	1048

	PAGE
Mundé. Epithelioma of the vaginal fornix.....	521
Extrauterine pregnancy; death from internal hemorrhage, with partial rupture of the sac.....	56
Hemato-salpinx; laparotomy; recovery.....	59
Intrauterine fibroid removed by vaginal enucleation from a virgin; recovery.....	55
Ovariectomy during pregnancy.....	730
Papilloma of the ovary, with secondary disease of the peri- toneum.....	1187
Successful performance of ovariectomy for the third time in the same patient.....	1187
Two cases of successful vaginal hysterectomy, with speci- mens.....	520
Vaginal hysterectomy for epithelioma; recurrence and death in two months after the operation.....	1186
Murray. Case of gangrenous stomatitis, complicating catarrhal pneumonia.....	166
Myo-fibroma, soft. hysterectomy for: recovery. Parkes.....	879
Myoma, hysterectomy for. Price.....	184
in pregnancy. Weeks.....	1105
uterine, the treatment of, by means of ergot. Nelson...	1112
Myomata, the uterine mucosa in case of. Wyder.....	783
uterine, the histology and surgical treatment of. Marcy..	1112

N.

Nelson. Address of the retiring president, Gynecological Society of Chicago.....	81
The treatment of uterine myoma by means of ergot.....	1112
Neuroses due to uterine disease, reflex gastric. Braun.....	223
functional, and their dependence on the genital organs. Uherek	670
Nilsen. Case in which the pulsating cord could be felt through the abdominal wall.....	417
Ovarian cyst and tube removed by laparotomy: unusual difficulty in penetrating the enveloping fold of perito- neum.....	1279
Pregnancy with almost complete occlusion of the vagina..	637
Specimen of aborted ovum.....	172
Spleen removed by laparotomy; recovery without bad symptoms	53
Nomenclature, obstetrical, uniformity in. Simpson.....	1072, 1084

O.

Oatman. Treatment of puerperal eclampsia.....	1086
Observations in obstetric practice, some rare clinical. Busey...920,	962
in Vienna. The General Hospital, Billroth, Carl Braun, Bandl, and others. Earle.....	1213
Obstetrical items of interest, several. Bartlett.....	979
Obstetrics, a case of, with remarks. Bartlett.....	539
and gynecology in France, report on. Auvard.....	724
conservative; with special reference to the removal of the secundines after abortion, and to the treatment of the third stage of labor. Glisan.....	1080
Occipito-posterior deliveries, a record of the presentation in seventy- five cases of parturition, with remarks on. Miles.....	770
Occlusion of the vagina, pregnancy with almost complete. Nilsen..	637

	PAGE
Oöphorectomy, a case of. Thompson.....	193
for hystero-mania. Lee.....	732
Ovarian abscess and pyo-salpinx. Imlach.....	105
adenoma, suppurating, with uterus: autopsy. Byford....	311
and uterine tumors, removal of solid, by laparotomy, with a report of nine cases. Mann	449
cyst, a large, cured by evacuation, drainage, and obliteration of its cavity. Parish.	872
cyst and tube removed by laparotomy; unusual difficulty in penetrating the enveloping fold of peritoneum. Nilsen,	1279
cyst in the broad ligament containing the degenerated ovary. Byford.....	310
cyst, intra-ligamentous. Goodell.....	178
cyst, simple. Hunter.....	1283
cyst simulating ectopic gestation. Packard.....	752
cyst, unilocular, specimen of; laparotomy during an attack of peritonitis; recovery. Hanks.....	175
cyst with papillomatous degeneration of the internal sur- face. Dawson.....	734
cystoma, proliferating. Byford.....	309
cystoma, with twisted pedicle, a case of. Parkes.....	878
pregnancy. Kelly.....	66
Ovaries, abscess of both. Price.....	1196
and Fallopian tubes, two cases of removal of the. Palmer.	779
and tubes, removal of, for subinvolution and chronic me- tritis. Kelly.....	180
cystic degeneration of, and double pyo-salpinx, specimen of. Lee.....	421
Ovariectomy, a year's work in. Goodell.....	298
Dr. William Goodell's statistics in. Goodell.....	48
during pregnancy. Mundé.....	730
for the third time in the same patient, successful per- formance of. Mundé.....	1187
in America, the early history of. Dunlap	1106
Ovary, cystic, removed by laparotomy; recovery. Hanks.....	172
enlarged from cystic degeneration. Wylie	421
papilloma of the, with secondary disease of the peritoneum. Mundé.....	1187
sarcoma of the; ascites due to pressure on the vena cava in- ferior by a displaced kidney. Coe.....	173
spindle-celled sarcoma of the. Price.....	1291
the frequency of malignant growths of the, and their surgical treatment. Leopold.....	1227
unilocular cyst of the right, the ovarian tissue showing cor- pus luteum of menstruation. Jaggard....	312
Ovum, aborted, specimen of. Nilsen.....	172
an intact, corresponding to the fifth month of pregnancy. Jaggard	1207
at term, with membranes intact, expulsion of an. Hof- heimer	1181

P.

Packard. Ovarian cyst simulating ectopic gestation	752
Pad, the antiseptic. Hirst.....	747
Pads, the antiseptic obstetrical, of Dr. H. J. Garrigues and Dr. Wm. L. Richardson. Garrigues.	644
Pain and insomnia arising from gynecological causes, the treatment of. Bigelow.....	707

	PAGE
Palmer. The therapeutic value of some medicines in the treatment of hemorrhagic conditions of the uterus.....	1050
Two cases of removal of the Fallopian tubes and ovaries...	779
Palpation, abdominal, in obstetrical diagnosis, the importance of, Hoag.....	1208
of the female ureters, notes on. Kelly.....	187
of the pelvic organs. Schultze.....	221
Papilloma of the Fallopian tube and the relation of hydro-peritoneum to tubal disease. Doran.....	95
of the ovary, with secondary disease of the peritoneum, Mundé.....	1187
Parametritis, hemorrhagic. Duncan.....	1001
Pardee. Perineorrhaphy as performed by Dr. W. Gill Wylie.....	532
Parish. A large ovarian cyst cured by evacuation, drainage, and obliteration of its cavity.....	872
A Porro-Mueller operation performed because of an impacted shoulder presentation.....	503, 535
Parkes. A case of interstitial pregnancy, with removal of the product of conception through the uterine cavity.....	536
A case of ovarian cystoma, with twisted pedicle.....	878
Hysterectomy for soft myo-fibroma; recovery.....	879
Successful removal of the uterus for fibroids.....	75
Parovarian cyst. Kelly.....	179
cyst and appendages, complicated by a uterine fibroid, Byford.....	310
Parvin. The importance of antiseptics in private obstetric practice.....	1063
Peckham. A contribution to the study of ulcerative lesions of the vulva, commonly called lupus or esthiomène.....	785
Pedicle in supra-vaginal hysterectomy, the treatment of the. Banstock.....	1055
suspension of the, after supra-vaginal amputation. Woelfler.....	108
Pedley. Midwifery among the Burmese.....	442
Pelves, male and female, what are the chief factors which determine the differences which exist in the form of the? Lane.....	1217
Pelvic abscess, case of, complicated with fibro-cyst of the uterus; explorative laparotomy. Wylie.....	165
adhesions, the vaginal tampon in. Coe.....	516
adhesions, the vaginal tampon in. Tucker.....	288
hematocele. Grant.....	104
inflammation, the use of the vaginal tampon in. Potter.....	1092
inflammations, antiseptic tamponnement of the vagina in the treatment of. Etheridge.....	548
measurement. Kelly.....	440
viscera, the, of an infant, three days old. Byford.....	877
Pelvis, contracted, remarks on the treatment of labor in. Longaker.....	463, 529
kyphotic, on the obstetrics of the. Champneys.....	97
Perineorrhaphy as performed by Dr. W. Gill Wylie. Pardee.....	532
primary. McArdle.....	1168, 1197
recent (English) methods of, by dividing the recto-vaginal septum and forming flaps. Sänger.....	1301
Perineum, laceration of, see Prolapse.	
Peritonitis as a metastasis of acute articular rheumatism during the puerperal state. Alsdorf.....	1032
following abdominal section, salines in. Baldy.....	1297
Pessary, a new retroversion stem. Donaldson.....	845
for procidentia uteri. Byrne.....	857
for urethrocele. McLean.....	518
stem, the intrauterine, as an emmenagogue. Reed.....	1112

	PAGE
Pessary, stem, worn continuously for three months. Coe.....	50
Phillips. A case of hematocele successfully treated by operation...	1222
A case of pregnancy complicated by secondary hepatic cancer	1221
Photographs of diseased tubes and ovaries. Wylie.....	1282
Placenta marginata, the cause of. Krukenberg.....	222
previa. Kelly.....	436
previa centralis. Hamill.....	1194
previa centralis. Kelly	438
previa totalis, case of; general adhesion of the placenta; recovery after profuse hemorrhage. Morrill.....	619
retained, after miscarriage, the treatment of. Budin.....	895
showing velamentous insertion of the umbilical cord, and remains of an extensive hemorrhage into the parenchyma of the organ. Jaggard.....	313
the implantation of the, and the insertion of the cord, note on the relation between. Champneys.	1216
Plates, hard-rubber, for protection of abdominal walls. Sims.....	420
Pneumonia in utero, acute. Hirst.....	1195
Poisoning from the use of sublimate. Doléris and Butte.....	335
Polk. Aneurism-needle with movable joint for use in vaginal hysterectomy	294
Are the tubes and ovaries to be sacrificed in all cases of salpingitis?.....	1045
Displaced spleen; splenectomy; recovery.....	296
Laparotomy for adherent retroflexed or retroverted uterus..	630
Porro-Mueller operation, a, performed because of an impacted shoulder presentation. Parish	503, 535
Porro operation on account of cicatricial contraction of the vagina. Weiss.....	893
Post. Recent hysterectomies for cancer.....	1150
Post-partum hemorrhage, management of pregnancy, with reference to the prevention of. Sale.....	1089
Potter. Annual address, Obstetrical Society of London.....	446
The use of the vaginal tampon in pelvic inflammation....	1092
Poussie. Typhoid fever in the puerperal woman.....	1079
Precocious development, a case of. Pryor.....	245
Pregnancy and labor, a new explanation of the renal troubles, eclampsia, and other pathological phenomena of. King.....	225, 347
complicated by secondary hepatic cancer. a case of. Phillips.....	1221
extrauterine. See Extrauterine, Ovarian, etc.	
in one horn of a double uterus, with successive miscarriages. case of. Mundé.....	168
interstitial. See Interstitial.	
ovariotomy during. Mundé	730
tetanus in. Meinert	1230
Premature children, some points in relation to. Taylor.....	1022, 1113
Presentation in seventy-five cases of parturition, a record of the, with remarks on occipito-posterior deliveries. Miles.....	770
Pressure, vaginal, in the treatment of chronic pelvic disease. Jackson	649
Price. Abdominal sections.....	749
Abscess of both ovaries.	1196
Adherent intestines from peritonitis, simulating fibroid tumor.....	1290
Double pyo-salpinx with co-existing ovarian cystoma on both sides.	535
Hysterectomy for myoma.....	184

	PAGE
Price. Labor complicated by large, hard heads	748
Pyo-salpinx	65, 751
Pyo-salpinx of gonorrheal origin	186
Report of thirty-one cases of intra-abdominal operations	180
Spindle-celled sarcoma of the ovary	1291
Prochownik. A contribution to the subject of castration	783
On diastasis of the abdominal muscles during the puerperium	222
Procidentia uteri, pessary for. Byrne	857
Prolapse of the posterior vaginal wall, or so-called laceration of the perineum, Emmet's new operation for. Baldy	430
Prolapsus operations. Frank	1303
operations, the primary and final results of. Cohn	1302
Pryor. A case of precocious development	245
Puerperal eclampsia, the treatment of. Jewett	1065
eclampsia, treatment of. Oatman	1086
fever, a study of certain questions in connection with, with particular reference to the use of intrauterine douche and curette. Earle	1077
fever and its treatment. Hoag	828, 941
fever, on the relation of the atmosphere to. Kucher	1077
fever, one factor in the etiology, one means of cure in. Earle	884
fever, pyo-salpinx in its relation to. Baldy	867
fever, the prevention of. Sibbet	1078
insanity. Fernald	714, 754
mastitis, the etiology of. Bumm	112
sepsis, virulent. Hirst	871
septicemia, on the prevention and treatment of. Madden	1077
state, late infection in the. Hirst	745
uterus, showing endometritis puerperalis. Jaggard	761
Pyo-salpingitis, laparotomy for. Longaker	186
Pyo-salpinx. Price	65, 751
and ovarian abscess. Imlach	105
double, and cystic degeneration of ovaries, specimen of. Lee	421
double, with abscess of one ovary; laparotomy; re- covery. Mundé	58
double, with co-existing ovarian cystoma on both sides. Price	535
in its relation to puerperal fever. Baldy	867
of gonorrheal origin. Price	186
pelvic abscess, recurrent attacks of pelvic peritonitis, laparotomy. Wylie	1283

R.

Reed. The intrauterine stem pessary as an emmenagogue	1112
Reeve. A case of inversion of the uterus without constitutional symptoms	140
Reflex gastric neuroses due to uterine disease. Braun	223
Reichard. Incomplete abortion of twin pregnancy	844
Reid. The remote results of shortening the round ligaments	1113
Renal troubles, eclampsia, and other pathological phenomena of pregnancy and labor, a new explanation of the. King	225, 347
Reproduction, histology and pathology of. Marcy	1088
Resuscitation of still-born children by "Schultze's method." Schultze	448
Retained placenta after miscarriage, the treatment of. Budin	895
Retroflexed or retroverted uterus, adherent, laparotomy for. Polk	630

Retroflexio utero. Vedeler.....	448
Retroflexion of the gravid uterus, labor at term, the importance of accurate diagnosis in pregnancy, with the history of a unique case of. Stewart.....	1081
Retro-peritoneal cysts, the operative treatment of, in connection with Mikulicz's method of drainage. Fenger.....	763
Retroversio-flexion, and a new instrument for reposition of the uterus. Miller.....	146
Retroversion stem pessary, a new. Donaldson.....	845
Reviews. Apostoli. Sur un Nouveau Traitement de la Métrite Chronique et en Particulier de l'Endométrite par la galvano-caustique Chimique Intrautérine.—A New Method of Treatment of Chronic Metritis, and Especially of Endometritis, by Intrauterine Chemical Galvano-caustic Applications.....	1226
Baginsky. Lehrbuch der Kinderkrankheiten für Aerzte und Studierende.—Text-book of Diseases of Children for Physicians and Students.....	1306
Bar. Du cancer utérin pendant la grossesse et l'accouchement.—Cancer of the Uterus during pregnancy and labor.....	219
Bulletin et memoire de la société obstétricale et gynécologique de Paris, pour l'année 1885.—Transactions of Paris Obstetrical and Gynecological Society for the year 1885.....	217
Charpentier. A practical Treatise on Obstetrics. Translated, etc., by Egbert H. Grandin, etc.....	664
Coe. Diseases and New-Growths of the Ovaries.....	1310
Crouzat. La pratique obstétricale. Manœuvres et opérations à l'Amphithéâtre.—Practical obstetrics, etc.....	892
Gallabin. A Manual of Midwifery.....	320
Gallard. Leçons cliniques sur les maladies des ovaires.—Clinical Lectures on the Diseases of Ovaries.....	664
Garrigues. A practical Guide in Antiseptic Midwifery.....	99
Goodell. Lessons in Gynecology.....	1227
Hegar. Die Entstehung, Diagnose und chirurgische Behandlung der Genitaltuberculose des Weibes.—The Origin, Diagnosis, and surgical Treatment of Tuberculosis of the Female Genital Organs.....	219
King. A Manual of Obstetrics.....	334
Litzmann. Erkenntniss und Behandlung der Frauen-Krankheiten im Allgemeinen.—The Diagnosis and Treatment of the Diseases of Women in General.....	219
Lutaud. L'Obstétrique et la Gynécologie en 1886.—Obstetrics and Gynecology in 1886.....	1225
Mann. A System of Gynecology by American Authors.....	1223
Martin. Pathologie und Therapie der Frauen-Krankheiten.—The Pathology and Therapy of the Diseases of Women.....	1226
Mundé. De l'Electricité comme agent Thérapeutique en Gynécologie.—Electricity as a Therapeutical Agent in Gynecology. Translated and annotated by Dr. P. Ménière, etc.....	1309
Parvin. The Science and Art of Obstetrics.....	555
Rankin. Hygiene of Childhood.....	334
Rheinstaedter. Praktische Grundzüge der Gynäkologie.—Practical Elements of Gynecology.....	213
Schaffier. Etudes cliniques sur les maladies des femmes.—Clinical Studies in the Diseases of Women.....	217
Smith. Abdominal Surgery.....	891

	PAGE
Reviews. Sneguireff. Hémorrhagies utérines, étiologie, diagnostique, Traitement.—Uterine Hemorrhages, their Etiology, Diagnosis, and Treatment	892
The British Gynecological Journal. Edited by Fancourt Barnes.	332
Transactions of the American Gynecological Society. Vol. XI.	667
Verhandlungen der deutschen Gesellschaft für Gynäkologie.—Transactions of the German Gynecological Association.	217
Winckel. Diseases of Women. A handbook for physicians and students, authorized translation by J. H. Williamson, etc.	666
Zweifel. Lehrbuch der Geburtshülfe für Aerzte und Studierende.—Text-book on Obstetrics for Practitioners and Students.	1225
Reynolds. A contribution in the mechanism of descent and flexion in vertex presentations.	369
Rotation, intra-vaginal, of curved forceps. Green.	728
Round ligaments, the remote results of shortening the. Reid.	1113

S.

Sacro-sciatic foramen, can we influence the mechanism of labor by external pressure over the? King.	513
Saenger. Etiology, pathology, and classification of salpingitis.	317
My work in reference to the Cesarean operation. A word of protest in reply to Dr. Henry J. Garrigues.	593
Recent (English) methods of perineorrhaphy by dividing the recto-vaginal septum and forming flaps.	1301
The Cesarean operation	1072
Sale. Management of pregnancy, with reference to the prevention of post-partum hemorrhage.	1089
Salines in peritonitis following abdominal section. Baldy.	1297
Salpingitis, are the tubes and ovaries to be sacrificed in all cases of? Polk	1045
chronic, a case of; tubo-ovarian cyst, acutely inflamed; hemorrhage into the cyst; operation; recovery. Elliot	141
etiology, pathology, and classification of. Saenger.	317
Sarcoma. Kelly.	65
of the ovary; ascites due to pressure on the vena cava inferior by a displaced kidney. Coe.	173
of the ovary, spindle-celled. Price	1291
Schatz. Ulcers of the bladder.	895
Schlee. The distention of the abdominal walls during pregnancy.	1228
Schlesinger. A laparo-salpingotomy successfully performed in Russia in 1784.	669
Schroeder, Karl. In memoriam. Kammerer.	281
Schultze. On palpation of the pelvic organs.	221
The resuscitation of still-born children by "Schultze's method"	448
Total extirpation of the cancerous uterus	220
Schwarz. Extrauterine pregnancy; elimination of the fetus through the uterus.	101
Sebaceous matter, curious balls of, found in a dermoid cyst. Mundé.	621
Secondary hemorrhage twenty-one days after delivery, case of alarming. Hagner.	305
Sections, abdominal. Price.	749

Semeleder. An additional case of cattle-horn laceration of the pregnant uterus.....	1036
Sepsis, virulent puerperal. Hirst.....	871
Septicemia, puerperal, on the prevention and treatment of. Madden.....	1078
Septum of the cervix, incomplete transverse. Budin.....	1238
Shoulder presentation, impacted, a Porro-Mueller operation performed because of an. Parish.....	503, 535
Sibbet. The prevention of puerperal fever.....	1078
Simpson. Uniformity in obstetrical nomenclature.....	1072, 1084
Sims. Hard-rubber plates for protection of abdominal walls.....	420
Specimen of intestine, showing healing process after injury.....	290
Urethral caruncle of unusual size.....	638
Skene. The president's annual address, American Gynecological Society.....	1052
Slippery-elm tenth, the. Byford.....	642
Sloughing wound of the labium, complicated with typhoid fever, case of. Coe.....	167
Smith. Tetanus following abortion.....	337
Speculum and retractor, a new adjustable. Jones.....	549
self-retaining Sims'. Cleveland.....	854
Spleen, displaced; splenectomy; recovery. Polk.....	296
removed by laparotomy; recovery without bad symptoms. Nilsen.....	53
Sponges, apparatus for squeezing out. Hunter.....	1280
Sponton. Cystitis in women.....	1112
Statistics in ovariectomy, Dr. William Goodell's. Goodell.....	48
of the first Vienna obstetrical clinic, in connection with antiseptics, during twenty-nine years. Braun.....	223
Stem pessary, the intrauterine, as an emmenagogue. Reed.....	1112
pessary worn continuously for three months. Coe.....	50
the intrauterine, in the treatment of flexures. Jackson.....	1058
Stewart. Improved forceps with parallel branches.....	1070
The importance of accurate diagnosis in pregnancy, with the history of a unique case of retroflexion of the gravid uterus, labor at term.....	1081
Still-births, the proportion and causes of. Christian.....	1084
Still-born children, the resuscitation of, by "Schultze's method." Schultze.....	448
Stomach, acute dilatation of, following laparotomy. Helmuth.....	1183
Stomatitis, gangrenous, complicating catarrhal pneumonia, case of. Murray.....	166
Stricture of the female urethra. Herman.....	444
Subinvolution and chronic metritis, removal of ovaries and tubes for. Kelly.....	180
Sublimate irrigation, on mercurialism in lying-in women undergoing. Dakin.....	210
poisoning from the use of. Doléris and Butte.....	335
Supra-vaginal amputation of the pregnant uterus complicating a multilocular fibroid tumor, a case of. Etheridge.....	69
Syringe for washing out abdominal cavity. Hanks.....	295

T.

Tait. Early diagnosis of extrauterine pregnancy.....	515
On the results of unilateral removal of the uterine appendages, operations, three successful. Wilson.....	302
Tait's abdominal bandage for use after laparotomy. Wylie.....	418
Tampon, the glycerin, as a therapeutic agent in gynecology. Huellman.....	336
the vaginal, in pelvic adhesions. Coe.....	516

	PAGE
Tampon, the vaginal, in pelvic adhesions. Tucker.....	288
vaginal, in pelvic inflammation, the use of the. Potter..	1092
Tamponnement, antiseptic, of the vagina in the treatment of pelvic inflammations. Etheridge	548
Taylor. Same points in relation to premature children.....	1022, 1113
Tenaculum and counter-pressure hook combined. Hanks.....	171
Cleveland.....	1280
self-retaining. Grandin.....	420
with steel shank, so constructed as to indicate the direc- tion of the point. Hanks	171
Tent, the slippery-elm. Byford	642
Tetanus following abortion. Smith	337
in pregnancy. Meinert.....	1230
Third stage of labor, the mechanism of. Champreys, 554, 660, 1119, 1214	
Thompson. A case of oöphorectomy... ..	193
Tracheotomy and intubation in diphtheria. Montgomery... ..	441
Trenholme. Internal uterine hemorrhage the result of over-disten- tion of the uterus from hydramnios	1081
Tube, Fallopian, papilloma of the, and the relation of hydro-perito- neum to tubal disease. Doran.....	95
Tubercular infection in a child, a case of. Betts	589
Tuberculosis of the peritoneum, laparotomy as a cure for. Van de Warker.....	932
Tubes and ovaries, removal of the. Burten.....	1093
diseases of the. Martin.....	1310
Fallopian and ovaries, two cases of removal of the. Palmer..	779
Fallopian, on the frequency of pathological conditions of the, as determined by observations in the post-mortem room of the London Hospital. Lewers.....	1002
Tubo-ovarian cysts. Griffith	1120
Tucker. The vaginal tampon in pelvic adhesions.....	288
Twin pregnancy, a case of incomplete abortion in; one fetus lost at third month, but its placenta retained to delivery at term of the other twin. Warren.....	507
pregnancy, incomplete abortion of. Reichard	844
Typhoid fever in a pregnant woman. Hirst	1296
fever in the puerperal woman. Poussie	1079

U.

Uherek. Functional neuroses, and their dependence on the genital organs	670
Ulcers of the bladder. Schatz.....	895
Umbilical cord, absolutely short, measuring nine inches in length, placenta with marginal insertion of an. Jaggard.....	644
Uniformity in obstetrical nomenclature. Simpson.....	1072, 1084
Uremia, experimental. Charpentier.....	1071
Ureters, female, notes on palpation of the. Kelly.....	187
palpation and sounding of the female. Kelly.....	1294
Urethra, lupus stricture and atresia of the female, a case of. Her- man	98
stricture of the female. Herman.....	444
Urethral caruncle of unusual size. Sims	638
Urethrocele, pessary for. McLean	518
Urinal for use in aggravated cases of vesico-vaginal fistula. Dawson.	50
Urinary fistulæ, the history of thirty-five operations for, performed from 1885 to 1886 at the Breslau clinic. Hoehlmann	224
Uterine and ovarian tumors, removal of solid, by laparotomy, with a report of nine cases. Mann	449
appendages, necessity for complete remov of the, when-	

	ever the operation is called for, with report of cases.	
	Vander Veer.....	497
Uterine	appendages, on the results of unilateral removal of the.	Tait, 478
	calculus. Briggs	103
	cancer, medical topical treatment of advanced. Cordes	1107
	cancer, the modern treatment of. Jackson	1095
	cancer, the treatment of, by hysterectomy. Koeberlé.....	107
	cavity, the latest method of dilatation of the. Charpentier. 334	
	contraction, tonic, without completeness of retraction. Dun-	
	can.....	1220
	displacements, a study of the causes and treatment of.	
	Emmet.....	1040
	dyspepsia. Bigelow.....	324
	fibroid weighing two and a half pounds, case of spontaneous	
	expulsion of a. Johnston.....	961
	fibroids, electrolysis in the treatment of. Freeman.....	290
	fibroids occupying the vagina, the surgical treatment of	
	large. Chambers	426
	fibroids, remarks on the removal of, by abdominal section.	
	Bantock	1286
	fibroids, the galvanic treatment of; full text of first fifty	
	cases. Cutter.....	113, 253, 376
	mucosa in case of myomata. Wyder	783
	mucous membrane and diseases of the adnexa, the relation	
	between the. Czempin.	1232
	myoma, the treatment of, by means of ergot. Nelson.....	1112
	myomata, the histology and surgical treatment of. Marcy.....	1112
Uterus	bicorporalis. Jones	660
	contributions to the pathology of chronic inflammation of	
	the lining membrane of the. Meyer	1104
	double, case of pregnancy in one horn of a, with successive	
	miscarriages. Mundé.....	168
	fibro-cyst of the, laparotomy for. Dawson.....	734
	fibro-myoma of the, a case of removal of the ovaries and tubes	
	for. Jackson.....	762
	fibro-sarcoma of the left horn of the, of lungs, pleura, peri-	
	cardium, rectum, transverse and descending colon, and	
	abdominal parietes. Byford.....	312
	fibro-sarcoma of the, rapid development of a. DaCosta....	1196
	fibrous tumor of the, hysterectomy for; death from septic-	
	emia. Hanks.....	1184
	forty-eight total extirpations of the, for carcinoma, complete	
	prolapse, and aggravated neuroses. Leopold.....	1229
	hemorrhagic conditions of the, the therapeutic value of some	
	medicines in the treatment of. Palmer.....	1050
	interstitial fibro-cyst of the; laparotomy. Harsha	32
	inversion of the, a case of chronic, of twenty-one months'	
	standing reduced by colpenrysis. Jaggard	130, 205
	inversion of the, without constitutional symptoms, a case of.	
	Reeve	140
	on the contractions of the, throughout pregnancy, and their	
	value in the diagnosis of pregnancy, etc. Hicks.....	1067
	puerperal, showing endometritis puerperalis. Jaggard. ..	761
	removal of imprisoned hairpin from the pregnant, intro-	
	duced by the patient to procure abortion. Fruitnight., 587	
	replacement of the, by the knee-chest position, utilization of	
	the outgoing air in the. Mosher.	1028
	retroflexed or retroverted adherent, laparotomy for. Polk....	630
	retroflexion of the. Vedeler.....	448
	retroflexion of the gravid, labor at term, the importance of	
	accurate diagnosis in pregnancy, with the history of a	
	unique case of. Stewart.....	1081

	PAGE
Uterus, successful removal of the, for fibroids. Parkes.....	75
supra-vaginal amputation of the pregnant, complicating a multilocular fibroid tumor, a case of. Etheridge.....	69
supra-vaginal amputation of the, the technique of. Hacker.....	108
the infantile. Johnstone.....	1063
the puerperal involution of the. Hausen.....	1228
the relations between changes in the tissues and changes in the shape of the. Hewitt.....	1096
the vaginal total extirpation of the, for cancer. Martin.....	1108
total extirpation of the cancerous. Schultze.....	220
tumors of the mucosa of the, and fungous endometritis, the differential diagnosis between. Heitzmann.....	897

V.

Vagina, congenital absence of the, with menstrual retention, and the history of a case after operation. Emmet.....	1189
cyst of the, a contribution to the study of. With a report of a case. Johnston.....	1121, 1241
occlusion of the, pregnancy with almost complete. Nilsen..	637
Vaginal enterocele, a case of anterior. Etheridge.....	314
fornix, epithelioma of. Mundé.....	521
hysterectomies, sixty. Fritsch.....	1008
hysterectomy, aneurism-needle with movable joint for use in. Polk.....	294
hysterectomy for carcinoma, statistics of. Martin.....	1238
hysterectomy for epithelioma; recurrence and death in two months after operation. Mundé.....	1186
hysterectomy, remarks on the technique of. Martin.....	1145
hysterectomy, two cases of successful, with specimens. Mundé.....	520
injections in Sims' posture. Foster.....	1064
portion, posterior lip of the. Weston.....	1208
pressure in the treatment of chronic pelvic disease. Jack- son.....	649
wall, cyst of the anterior. McLean.....	415
Vander Veer. Necessity for complete removal of the uterine appen- dages whenever the operation is called for, with report of cases.	497
Van de Warker. Extrauterine pregnancy, and its treatment by elec- tricity.....	1063
Laparotomy as a cure for tuberculosis of the peri- toneum.....	932
Vedeler. Retroflexio uteri.....	448
Veit. Endometritis.....	1231
Ventral hernia caused by laparotomy. Wylie.....	25, 52
Version, difficult, the value of the genu-pectoral position in. Cutts.....	1173, 1204
Vesico-vaginal fistula, urinal for use in aggravated cases of. Daw- son.....	50
Vicarious menstruation. MacCallum.....	1068
menstruation, cases of. Wright.....	88
Vienna, observations in. The General Hospital, Billroth, Carl Braun, Bandl, and others. Earle.....	1213
Villi of the chorion, dropsy of the. Zinke.....	779
Viscera, the pelvic, of an infant three days old. Byford.....	877
Vulva, epithelioma of the. Janvrin.....	1276
ulcerative lesions of the, commonly called lupus or esthi- omène, a contribution to the study of. Peckham.....	785

W.

	PAGE
Warren. A case of incomplete abortion in twin pregnancy; one fetus lost at third month, but its placenta retained to delivery at term of the other twin.	507
Wathen. Abdominal section for removal of the fetus.	1074
Rapid dilatation of the cervix uteri.	1097
Weeks. Myoma in pregnancy.	1105
Weiss. Porro operation on account of cicatricial contraction of the vagina.	893
Weston. Posterior lip of the vaginal portion.	1208
The specimens from a case of hysterectomy for cancer of the vaginal portion.	1207
Wilson. A contribution to the history of hydramnios.	1
Intrauterine medication.	286
Three successful Tait operations.	302
Wire, fine copper, suitable for plastic operations. Hunter.	406
Woelfler. Suspension of the pedicle after supra-vaginal amputation.	108
Wright. Cases of vicarious menstruation.	88
Wyder. The uterine mucosa in case of myomata.	783
Wylie. Case of pelvic abscess, complicated with fibro-cyst of the uterus; explorative laparotomy.	165
Dr. W. Gill, perineorrhaphy as performed by. Pardee.	532
Irrigation of the abdominal cavity with hot water in cases of collapse during laparotomy.	54
Ovary enlarged from cystic degeneration.	421
Photographs of diseased tubes and ovaries.	1282
Pyo-salpinx, pelvic abscess, recurrent attacks of pelvic peritonitis, laparotomy.	1283
Rare case of galactorrhœa.	638
Set of assorted drainage tubes.	51
Tait's abdominal bandage for use after laparotomy.	418
Ventral hernia caused by laparotomy.	25, 52

Z.

Zinke. A plea for the teaching of practical midwifery and the education of midwives.	656
Dropsy of the villi of the chorion.	779

RG
l
A57
v.20

The American journal of
obstetrics and diseases
of women and children

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

